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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

UNITED STATES OF AMERICA and STATE OF CALIFORNIA, Plaintiffs, v. MONTROSE CHEMICAL CORP. OF CALIFORNIA, et al., Defendants. AND RELATED COUNTER, CROSS, AND THIRD PARTY ACTIONS.	NO. CV 90-3122-R 90-3122 PARTIAL CONSENT DECREE (RELATING TO THE NEIGHBORHOOD AREAS)

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CONSENT DECREE

This Consent Decree ("Decree") is made and entered into by and among the United States of America ("the United States"). on behalf of the United States Environmental Protection Agency ("EPA"). and the California Department of Toxic Substances Control ("DTSC"), the California Hazardous Substance Account, as defined in Caiifornia Health and Safety Code section 25330, the California Hazardous Substance Cleanup Fund as, defined in California Health and Safety Code section 25385.3, and the California Toxic Substances Control Account, as defined in California Health and Safety Code section 25173.6 (hereinafter collectively referred to as "DTSC"), and Defendants Montrose Chemical Corporation of California ("Montrose"), Aventis CropScience USA, Inc. (formerly known as Rhone-Poulenc Inc.) ("Aventis"), Chris-Craft Industries, Inc., ("Chris-Craft"), and Atkemix Thirty Seven, Inc. ("Atkemix-37") (collectively, the "DDT Defendants"). This Decree is not intended to affect in any way the United States' and the DTSC's claims against any entity other than the Released Parties (as defined below).

INTRODUCTION

A. The United States and the State of California ("State"). on behalf of DTSC, have filed a Third Amended Complaint in this matter, under Section 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §§ 9607 - 9675, seeking, *inter alia*, recovery of and response costs in connection with releases of DDT and other hazardous substances into the environment at and from the Montrose Plant Property, as defined herein.

B. In the First Claim for Relief of the Complaint, the United States and the State asserted a claim under Section 107(a)(1-4)(C) of CERCLA, 42 U.S.C. § 9607(a)(1-4)(C), for alleged natural resource damages relating to discharges of DDT through the County Sanitation District No. 2 of Los Angeles County collection system, through the White's Point Outfall into the Pacific Ocean. The First Claim was settled in a Consent Decree entered by the Court on March 15, 2001.

C. In the Second Claim for Relief of the Complaint, the United States and DTSC assert a claim for recovery of costs incurred and declaratory judgment for costs to be incurred by EPA and DTSC in response to the release or threatened release of hazardous substances into the environment at and/or from the Montrose Plant Property pursuant to Section 107(a)(1-4)(A) of CERCLA, 42 U.S.C. § 9607(a)(1-4)(A).

D. The Third Amended Complaint specified that the Second Claim included costs incurred and declaratory judgment for costs to be incurred by EPA and DTSC in connection with the Offshore Areas. This portion of the Second Claim was also settled in the Consent Decree entered on March 15, 2001.

E. Pursuant to a Partial Consent Decree that was entered by the Court on October 20, 2000, the DDT Defendants have already paid $5.125 million as reimbursement and settlement of claims for past response costs incurred by the United States and DTSC, as defined therein. In addition, Montrose previously paid $1,354,612.37 as reimbursement of past response costs incurred by the United States with respect to portions of the Onshore Areas.

F. Trial in this action between Plaintiffs and the DDT Defendants commenced on October 17, 2000.

G. On October 18, 2000, the Court took under submission the issue of liability of the DDT Defendants for certain Onshore Areas to which Plaintiffs contended that hazardous substances from the Montrose Plant Property have been released, namely, (1) the Neighborhood Areas and (2) the Current Storm Water Pathway. On October 19, 2000, Defendants moved for judgment of non-liability on these two issues, and on October 26, 2000, Plaintiffs opposed those two motions.

H. On October 27, 2000, the Court took under submission the issue of the alleged liability of Chris-Craft as an operator of the Montrose Plant Property.

I. EPA and DTSC have determined that residential properties along the portion of Kenwood Avenue between 204th Street and Torrance Boulevard contain

elevated levels of DDT. Plaintiffs allege, and the DDT Defendants deny, that the DDT in these properties flowed off the Montrose Plant Property into the historic Kenwood Ditch.

J. EPA is about to begin a removal action, selected and described in the Removal Action Memorandum, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, to excavate the DDT from certain residences in the Neighborhood Areas, along Kenwood Avenue. This Decree provides that the excavated materials will be stored and maintained on the Montrose Plant Property until a final remedy for existing DDT contaminated soils at the Montrose Plant Property has been selected by EPA.

K. EPA has designed Storage Cells for construction on the Montrose Plant, and Montrose has inspected and accepted the design. EPA and Montrose have agreed to the Operation and Maintenance Workplan for these Storage Cells, which is attached to and incorporated into this Decree. The Released Parties have been listed as additional insured parties on the insurance policy held by I.T. Corporation, EPA's sub-contractor for the construction of the Storage Cells. DTSC agrees that the Storage Cells and the materials to be stored therein are not subject to a facility fee or generator fee, pursuant to Chapter 6.5 of the California Health and Safety Code.

L. Subject to the reservations and re-openers in this Decree, this Decree finally and fully resolves all present and future liability of the Released Parties to the United States and DTSC for Response Costs relating to the Neighborhood Areas. This Decree does not resolve claims relating to the following: the Montrose Plant Property; the real property located at 1401 West Del Amo Blvd., Los Angeles, California and owned by Jones Inc; groundwater contaminated by hazardous substances at or emanating from the Montrose Plant Property; those portions of the Normandie Avenue Ditch adjacent to and south of 20201 Normandie Avenue; and the Current Stormwater Pathway.

M. This settlement is made in good faith after arm's-length negotiations conducted under the supervision of Special Master John Francis Carroll. The United States, DTSC, and the DDT Defendants agree, and this Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith,

that settlement of this matter and entry of this Decree will avoid further complicated litigation between the Parties, is the most appropriate means to resolve the matters covered herein, and is fair, reasonable and in the public interest.

NOW, THEREFORE, with the consent of the Parties to this Decree, it is hereby **ORDERED, ADJUDGED AND DECREED**:

JURISDICTION AND VENUE

1. This Court has personal jurisdiction over the Parties. This Court has jurisdiction over the subject matter of this action and the Parties to this Decree pursuant to 28 U.S.C. §§ 1331, 1345, 1651 and 1367, and Sections 106, 107 and 113(b) of CERCLA, 42 U.S.C. §§ 9606, 9607 and 9613(b). The Released Parties consent to and shall not challenge entry of this Consent Decree or this Court's jurisdiction to enter or enforce this Consent Decree.

APPLICABILITY OF DECREE

2. The provisions of this Decree, including the covenants not to sue and contribution protection, shall be binding on, apply to, and inure to the benefit of the United States, DTSC, the DDT Defendants and their successors and assigns, and for the purposes of the sections of this Decree called "Covenants by Released Parties," "Covenant Not to Sue For Response Activities and Costs Relating to the Neighborhood Areas, And Reservation of Rights," and "Effect of Settlement/Contribution Protection," the Released Parties, their successors and assigns. No change in the ownership or organizational form or status of the DDT Defendants shall affect their rights or obligations under this Decree.

EFFECT OF SETTLEMENT/ENTRY OF JUDGMENT

3. This Decree was negotiated and executed by the Parties hereto in good faith at arm's length to avoid the continuation of expensive and protracted litigation and is a fair and equitable settlement of claims which were vigorously contested. The DDT Defendants do not admit any of Plaintiffs' allegations or claims set forth herein and deny any liability whatsoever for Plaintiffs' claims against the DDT Defendants set forth in the

Complaint, and do not admit that any area other than the Montrose Plant Property has been impacted by hazardous substance releases from the Montrose Plant Property. This Decree should not constitute or be interpreted, construed or used as evidence of any admission of liability, law or fact. Except as otherwise provided in the Federal Rules of Evidence, this Consent Decree is not admissible in evidence against any Party by any person or entity not a Party to the Decree in any judicial or administrative proceeding.

4. Upon approval and entry of this Decree by the Court, this Decree shall constitute a final judgment between and among the United States and the DTSC, and the DDT Defendants regarding the matters addressed and resolved by this Decree.

DEFINITIONS

5. This Decree incorporates the definitions set forth in Section 101 of CERCLA, 42 U.S.C. § 9601, including but not limited to the definitions of the terms "release" and "response." In addition, whenever the following terms are used in this Decree, they shall have the following meanings:

A. "Current Storm Water Pathway" means the Kenwood Drain, the Torrance Lateral, the Dominguez Channel (from Laguna Dominguez to the Consolidated Slip), and the portion of the Los Angeles Harbor known as the Consolidated Slip from the mouth of the Dominguez Channel south to but not extending beyond Pier 200B and 200Y.

B. "Date of Acceptance" or "Date of Rejection" of a Storage Cell shall mean the date on which the DDT Defendants provide written notice to EPA pursuant to the provisions of Paragraph 8.B of this Decree.

C. "Date of Entry of this Decree" shall mean the date on which the District Court has approved and entered this Decree as a judgment.

D. "Date of Execution of this Decree" shall mean the date on which the Decree has been signed by Defendants.

E. "Date of Final Approval of this Decree" shall mean the later of (1) the date on which the District Court has approved and entered this Decree as a judgment and all applicable appeal periods have expired without an appeal being filed, or (2) if an appeal is

taken, the date on which the District Court's judgment is affirmed and there is no further right to appellate review. However, if no person appears in District Court to oppose entry of this Decree, then the Date of Final Approval of this Decree shall mean the Date of Entry of this Decree.

F. "Date of Lodging of this Decree" shall mean the date that this Decree is lodged, or a copy of it is filed, with the Court.

G. "DDT Defendants' Operations and Maintenance Period" shall mean the period that will begin on the date that the DDT Defendants provide written notice to EPA that the DDT Defendants have accepted a filled Storage Cell pursuant to Paragraph 8.B of this Decree and continue until four years from that Date of Acceptance or until EPA selects and implements the response actions for the Montrose Plant Property soils, whichever occurs sooner.

H. "DTSC" for purposes of this Consent Decree shall include all of the following: the California Department of Toxic Substances Control; the California Hazardous Substances Account, as defined in California Health and Safety Code section 25330; the California Hazardous Substance Cleanup Fund, as defined in California Health and Safety Code section 25385.3; and the California Toxic Substances Control Account, as defined in California Health and Safety Code section 25173.6.

I. "Interest" shall mean interest at the rate specified for interest on investments of the Hazardous Substance Superfund established under Subchapter A of Chapter 98 of Title 26 of the U.S. Code, compounded on October 1 of each year, in accordance with 42 U.S.C. section 9607(a).

J. The "Kenwood Drain" shall mean for purposes of this Decree that subsurface storm water conveyance that begins on the west side of Normandie Avenue (adjacent to the Farmers Brothers facility), crosses under Normandie Avenue, proceeds along 204th Street, proceeds down Kenwood Avenue crossing Torrance Boulevard. The Kenwood Drain is located within, but is not part. of the "Neighborhood Areas."

K. "Montrose Plant Property" shall mean for purposes of this Decree the approximately thirteen (13) acre parcel at 20201 South Normandie Avenue, Los Angeles, California at which, among other things, Montrose Chemical Corporation of California operated a DDT manufacturing and, later, a formulation plant.

L. The "Neighborhood Areas" includes all residential properties in 1) the area of Los Angeles County bounded by Normandie Avenue, New Hampshire Avenue, Torrance Blvd., and Del Amo Blvd., 2) the area of Los Angeles County bounded by Denker Avenue, Del Amo Blvd., Western Avenue and Torrance Blvd., and 3) all soils and debris excavated from and transported out of the geographic areas delineated in items 1 and 2 of this definition (including but not limited to the Storage Cells themselves) as a result of the implementation of the removal action selected in the Removal Action Memorandum. The term "Neighborhood Areas" does not include groundwater (including any DNAPL) or the Kenwood Drain.

M. "Operations And Maintenance Workplan" or "Workplan" shall mean for the purposes of this Decree that plan approved by EPA on June 29, 2001 which incorporates the performance standards and establishes the procedures, specifications and requirements for the work required of the DDT Defendants under this Decree. The Workplan is attached to and incorporated by reference in this Decree.

N. "Parties" shall mean the United States, DTSC, and the Released Parties.

O. "Released Parties" shall mean the DDT Defendants, their predecessor or successor entities, and direct or indirect parents or subsidiaries, to the extent of any derivative liability attributable to any such entities, and further includes any of such entities' current or former officers, directors, and employees, provided and to the extent that any such individuals were acting within the scope of their duties and in their capacity as officers, directors, or employees; and, for the purposes of Paragraphs 20-23 and 40-42, "Released Parties" includes Stauffer Management Company, Imperial Chemical Industries PLC, ICI International Investments, Inc., Zeneca, Inc., Zeneca Holdings, Inc., Stauffer Chemical Company (a former corporation organized under the laws of the State

of Delaware). Rhodia, Inc., Aventis CropScience USA, LP, together with their predecessor or successor entities, and direct or indirect parents or subsidiaries, to the extent of any derivative liability attributable to any such entities, and further includes any of such entities' current or former officers, directors, and employees, provided and to the extent that any such individuals were acting within the scope of their duties and in their capacity as officers, directors, or employees.

P. "Removal Action Memorandum" means the U.S. EPA Region 9 Removal Action Memorandum selecting removal actions for residential properties along and adjacent to Kenwood Avenue (dated June 8, 2001), which is attached to this Decree.

Q. "Response Costs" shall mean for purposes of this Decree all costs of response (including both removal and remedial costs, and all remaining past, present, and future response costs) as provided in Section 107(a)(1-4)(A), (B) and (D) of CERCLA, 42 U.S.C. § 9607(a)(1-4)(A), (B) and (D), and as defined in Section 101(25) of CERCLA, 42 U.S.C. § 9601(25), that the United States (including EPA), or DTSC, or any other person, as defined in section 101(21) of CERCLA, 42 U.S.C. section 9601(21), have incurred in the past or will incur in the future with respect to the Neighborhood Areas.

R. "Storage Cells" means storage cells to be constructed by EPA on the Montrose Plant Property, into which soil and debris generated as a result of the implementation of removal actions authorized under the EPA Removal Action Memorandum will be placed.

S. "United States" for purposes of this Consent Decree shall mean the United States of America, including its departments, agencies and instrumentalities.

PAYMENTS WITH RESPECT TO RESPONSE ACTIVITIES

6. A. Within ten (10) business days after the Date of Final Approval of this Decree, the DDT Defendants shall pay to EPA the sum of $200,000, plus Interest accruing from the Date of Lodging of this Decree, for Response Costs. The DDT Defendants shall make this payment to "the United States Environmental Protection Agency, Montrose Chemical National Priorities List Superfund Site Special Account

Number 2." The payment to EPA shall be made by Electronic Funds Transfer ("EFT" or "wire transfer") in accordance with instructions provided by the United States to the DDT Defendants at the time of Lodging of the Decree. Any EFT received after 11:00 A.M. (Eastern Time) will be credited on the next business day. The DDT Defendants shall send notice of the EFT to Plaintiffs as provided in Paragraph 43 of this Decree. All payments to the United States under this Paragraph shall reference the Montrose Chemical Corporation of California Superfund Site, Site # 9T26, DOJ Case # 90-11-3-511/3, and U.S.A.F.I. file number 9003085. The amounts paid to EPA pursuant to this Consent Decree and deposited into the above-referenced EPA special account shall be (1) retained and used to conduct or finance response actions (including but not limited to the operation and maintenance of the Storage Cells after the expiration of the DDT Defendants' Operations and Maintenance Period) at or in connection with the Montrose National Priorities List Superfund Site, or (2) transferred by EPA to the Hazardous Substance Superfund, but only after the selection and implementation of remedial actions for the Montrose Plant Property soil.

B. Within ten (10) business days after the Date of Final Approval of this Decree, the DDT Defendants shall pay DTSC $50,000 plus Interest accruing from the Date of Lodging of this Decree for Response Costs. The payment to the DTSC shall be made by certified check payable to "Cashier, California Department of Toxic Substances Control", and shall bear on its face this case name and number. The DDT Defendants shall send notice of payment to Plaintiffs as provided in Paragraph 43 of this Decree. Payment shall be mailed to:

DTSC Accounting office
DTSC
1001 I Street
Sacramento, CA 95814

C. EPA may at any time subsequent to completing construction of the Storage Cells demand, in addition to the payments under sub-Paragraphs A and B of this Paragraph, payment from the DDT Defendants of the actual costs incurred in constructing the Storage Cells, along with documentation supporting the amount demanded. Within

thirty (30) days of such demand, the DDT Defendants shall pay EPA the actual costs demanded up to a maximum amount of $356.188. The DDT Defendants may not contest the adequacy of the documentation provided in support of the reimbursement amount demanded. Payment shall be made as described in Paragraph 6.A of this Section.

WORK TO BE PERFORMED

7. This Paragraph is intentionally left blank.

8. A. Pursuant to the "Access" provisions below, as of the Date of Execution of this Decree, the DDT Defendants shall allow access to EPA (and their contractors, subcontractors and others authorized by EPA) to the Montrose Plant Property in order to construct and fill the Storage Cells. EPA has designed and intends to construct and fill the Storage Cells in accordance with the approved Storage Cell design (Attachment A to the Operations and Maintenance Workplan). EPA has instructed its sub-contractor, I.T. Corporation, to provide to the DDT Defendants' Project Coordinator copies of all construction contract compliance documents as such documents are provided to EPA. During the time period while EPA is constructing and filling the Storage Cells, EPA will arrange for one or more security guards to be present at the Montrose Plant Property after working hours and on weekends. During the time period while EPA is constructing and filling the Storage Cells, the DDT Defendants will not be responsible for responding to any release of hazardous substances that occurs as a result of the construction and filling of the Storage Cells. After the last Storage Cell is accepted by the DDT Defendants pursuant to Paragraph 8.B below, EPA will provide notice, except in emergencies, to the DDT Defendants' Project Coordinator forty-eight hours prior to exercising the right of access granted in this Section.

B. The DDT Defendants will have the right to inspect the Storage Cells after they are constructed by EPA's contractor, and accept or reject that they were constructed consistent with EPA's design. The DDT Defendants will have the right to inspect the Storage Cells after they are filled by EPA's contractor, and accept or reject that they were filled consistent with EPA's design. The DDT Defendants will provide written notice of

acceptance or rejection of a storage cell to EPA within twenty-four hours of each inspection. The DDT Defendants must accept the Storage Cells if they are constructed and filled consistent with EPA's design. If the DDT Defendants do not accept any Storage Cell pursuant to the preceding three sentences, and refuse to perform the work required by the Operations And Maintenance Workplan, then (1) EPA has the unilateral right to perform all operation and maintenance of the Storage Cells consistent with the Removal Action Memorandum; and (2) EPA, notwithstanding the provisions of the Section of this Decree entitled "Covenant Not to Sue For Response Activities And Costs Relating to The Neighborhood Areas, And Reservation of Rights," may seek recovery under section 107(a) of CERCLA, 42 U.S.C. § 9607(a), of all costs incurred as a result of performing the operation and maintenance of the Storage Cells for the period beginning on the Date of Rejection and continuing until the earlier of four years from the Date of Rejection or the date on which response actions for the Montrose Plant Property soils are completed. Any failure by the DDT Defendants to accept any Storage Cell under this Paragraph can be the subject of dispute resolution pursuant to the Section of this Decree entitled "Dispute Resolution."

9. A. If the DDT Defendants accept the constructed and filled Storage Cells pursuant to Paragraph 8, the provisions of this Paragraph apply.

B. DDT Defendants shall operate and maintain the Storage Cells pursuant to the Operations and Maintenance Workplan for a period of four years beginning from the Date of Acceptance of the filled Storage Cells under Paragraph 8 or until EPA selects and implements response actions for the Montrose Plant Property soils, whichever occurs earlier. After the end of the DDT Defendants' Operations and Maintenance Period, should it be necessary, (1) EPA will conduct any operation and maintenance of the Storage Cells (including emergency response to releases from the Storage Cells); (2) the DDT Defendants shall allow access for this purpose pursuant to the "Access" provisions below; and (3) the DDT Defendants will have no further work obligations with respect to the Storage Cells, subject to the reopeners set forth in Paragraph 22 below.

C. Defendants shall operate and maintain the Storage Cells consistent with all ARARs identified in the Removal Action Memorandum, consistent with the Operation and Maintenance Workplan and any other applicable law. The performance standards for this work are: a) that no hazardous substance(s) shall be released from any Storage Cell into the environment; b) that all activities related to the operation and maintenance (including but not limited to emergency response and corrective action) of these Storage Cells comply with the ARARs identified in the EPA Action Memorandum and any other applicable law; and c) DDT Defendants must operate and maintain the Storage Cells as required by the EPA approved Operations and Maintenance Workplan. Laws or regulations that are promulgated after June 8, 2001 can only become ARARs for the selected removal actions should EPA and DTSC determine in a manner consistent with the National Contingency Plan, 40 C.F.R. Part 300, that: (1) the newly promulgated law or regulation qualifies as an ARAR; and (2) the newly promulgated law or regulation renders the previously selected removal actions no longer protective of human health or the environment.

D. The DDT Defendants agree that the Storage Cells and soils stored therein may be remediated along with the on-and near property soils (e.g., consolidated under a cap of all or a portion of the Montrose Plant Property). However, consistent with Paragraph 21 below, in the event that the DDT Defendants perform the response action for on- and near-property soils, the DDT Defendants will not be required to perform response actions with respect to the soils in the Storage Cells and any materials contained therein unless the money for that work is provided by a source other than the Released Parties.

E. In the event that EPA conducts operation and maintenance of the Storage Cells after the conclusion of the DDT Defendants' Operations and Maintenance Period and EPA retains a contractor or sub-contractor to conduct such operation and maintenance activities, EPA will use its best efforts to have the Released Parties added to

the insurance held by the contractor or sub-contractor for such operation and maintenance work.

10. Designation of Contractor, Project Coordinator, and On-Scene Coordinator.

A. The DDT Defendants designate Earth Tech, 100 West Broadway, Suite 240, Long Beach, CA 90802, as their contractor to implement the Operations and Maintenance Workplan. The DDT Defendants designate Brian Dean of Earth Tech (phone number (562) 951-2212; fax number (562) 951-2086) as their project coordinator responsible for administration of all of the DDT Defendants actions required by this Consent Decree. Receipt by the DDT Defendants' Project Coordinator of any notice or communication from EPA relating to this Consent Decree shall constitute receipt by all DDT Defendants.

B. Should Earth Tech and/or Brian Dean cease to perform the responsibilities set forth in the preceding Sub-Paragraph, DDT Defendants shall notify EPA of the name(s) and qualification(s) of replacement contractor(s) within 10 business days. EPA retains the right to disapprove of any, or all, of the contractors and/or subcontractors and/or project managers retained by the DDT Defendants, or of the DDT Defendants' choice of itself (themselves) to do the removal action. If EPA disapproves of a selected contractor or manager, DDT Defendants shall retain a different contractor or notify EPA that it will perform the removal action itself within (10) business days following EPA's disapproval and shall notify EPA of that contractor's name or DDT Defendants's name and qualifications within (10) business days of EPA's disapproval.

C. EPA has designated Dennis Geiser of Regional 9 as its On-Scene Coordinator (OSC). DDT Defendants shall direct all submissions required by this Consent Decree both to the OSC at U.S. EPA Region 9, Mailcode SFD7, 75 Hawthorne St., San Francisco, CA 94105, and to Gloria Conti at DTSC, 5796 Corporate Avenue, Cypress, CA 90630.

11. Reporting.

A. DDT Defendants shall submit a written progress report to EPA concerning actions undertaken pursuant to this Decree every 90 days during the DDT Defendants' Operations and Maintenance Period, unless otherwise directed by the OSC in writing. These reports shall describe all significant developments during the preceding period, including the inspections, problems encountered and actions taken in response, and a schedule of work to be performed, if any.

B. The DDT Defendants and successors in title shall, at least 30 days prior to the conveyance of any interest in real property at the Montrose Plant Property, give written notice of this Decree to the transferee and written notice to EPA and DTSC of the proposed conveyance, including the name and address of the transferee. The party conveying such an interest shall require that the transferee comply with this Decree.

C. Final Report. Within 90 days after completion of all removal actions required under this Decree, the DDT Defendants shall submit for EPA and DTSC review and approval a final report summarizing the actions taken to comply with this Consent Decree. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports." The final report shall include a good faith estimate of total costs or statement of actual costs incurred in complying with the Decree, a presentation of any analytical results of all sampling and analyses performed, a summary of the operations and maintenance activities performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., inspection reports). The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

> Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

12. Emergency Response and Notification of Release. If any incident or change in the conditions of one or more of the Storage Cells occurs during the DDT Defendants Operation and Maintenance Period that causes or threatens to cause an additional release of hazardous substances at or from the Montrose Plant Property or an endangerment to the public health, welfare, or the environment, the DDT Defendants shall immediateiy take all appropriate action. The DDT Defendants shall take these actions in accordance with all applicable provisions of this Decree, including, but not limited to the Health and Safety Plan (as incorporated by reference into the Operations and Maintenance Workplan) and the Operations and Maintenance Workplan, to prevent, abate or minimize such release or endangerment caused or threatened by the release. DDT Defendants shall also immediately notify the OSC or, in the event of his/her unavailability, shall notify the Regional Duty Officer at (415) 744-2000, of the incident or site conditions. If the DDT Defendants fail to take action, then EPA may respond to the release or endangerment and reserve the right to pursue cost recovery. In addition, in the event of any release of a hazardous substance, the DDT Defendants shall immediately notify EPA's OSC at (415) 744-2000 and the National Response Center at telephone number (800) 424-8802. The DDT Defendants shall submit a written report to EPA within seven (7) days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent a reoccurrence of such a release. This reporting requirement is in addition to, not in lieu of, reporting under CERCLA section 103(c) and section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. Sections 11001 et seq.

13. Modification. If modifications to the design of the Storage Cells occur during construction of the Storage Cells, then the OSC may direct modifications to the Operations and Maintenance Workplan (including all attachments thereto) based on field conditions. Modifications to any plan or schedule (or the attached Workplan) may be made in writing by the OSC or at the OSC's oral direction. If the OSC makes an oral

modification, it will be memorialized in writing within (21) days; provided, however, that the effective date of the modification shall be the date of the OSC's oral direction. If DDT Defendants seek permission to deviate from the Operations and Maintenance Workplan, their Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. No informal advice, guidance, suggestion, or comment by EPA regarding reports, plans, specifications, schedules, or any other writing submitted by the DDT Defendants shall relieve the DDT Defendants of (its/their) obligation(s) to obtain such formal approval as may be required by this Decree, and to comply with all requirements of this Decree unless it is formally modified.

14. Notice of Completion. When EPA determines, after EPA's review of the Final Report, that all obligations required to be performed by the DDT Defendants during the DDT Defendants' Operation and Maintenance Period have been fully performed in accordance with this Decree, EPA will provide notice to the DDT Defendants. If EPA determines that any obligations required to be performed by the DDT Defendants during the DDT Defendants' Operation and Maintenance Period have not been completed in accordance with this Decree, EPA will notify the DDT Defendants, provide a list of the deficiencies, and require that DDT Defendants modify the Workplan to correct such deficiencies. The DDT Defendants shall implement the modified and approved Workplan and shall submit a modified Final Report in accordance with the EPA notice.

15. OSC. EPA's OSC shall be responsible for overseeing the proper and complete implementation of this Decree. The OSC shall have the authority vested in an OSC by the NCP, 40 C.F.R. § 300.120, including the authority to halt, conduct, or direct any action required by this Decree. Absence of the OSC from the Site shall not be cause for stoppage of work unless specifically directed by the OSC. EPA and the DDT Defendants shall have the right to change their designated OSC or Project Coordinator. EPA shall notify the DDT Defendants, and the DDT Defendants shall notify EPA fourteen days before such a change is made.

16. Should the DDT Defendants violate this Decree or any portion hereof, EPA may carry out the required actions unilaterally, pursuant to section 104 of CERCLA, 42 U.S.C. Section 9604, and/or may seek judicial enforcement of this Decree, and/or stipulated penalties as set forth below.

ACCESS

17. As of the Date of Execution of this Decree, the DDT Defendants shall allow EPA (and its contractors and subcontractors or others authorized by EPA) access to the Montrose Plant Property for the purpose of constructing, filling, operating and maintaining the Storage Cells (including emergency response activities). The DDT Defendants also agree that the soil and debris excavated as a result of implementation of the removal actions authorized by the Removal Action Memorandum may be stored at the Montrose Plant Property until CERCLA response actions for the DDT contaminated soils at the Montrose Plant Property are selected and implemented. The DDT Defendants shall also allow EPA access to the Montrose Plant Property for the purpose of removing or remediating the soils contained in the Storage Cells. The amount of soil and debris excavated from the Neighborhood Areas which may be stored at the Montrose Plant Property pursuant to this Paragraph is limited to 12,000 cubic yards.

18. In addition to the preceding Paragraph, the DDT Defendants shall provide access to the Montrose Plant Property to implement this Decree, or for the purposes of inspecting, investigating or verifying compliance with the terms of this Consent Decree, and provide access to all records and documentation related to the implementation of the Operations and Maintenance Workplan conducted by the DDT Defendants pursuant to this Decree. Such access shall be provided to EPA employees, contractors, agents, consultants, designees, representatives. These individuals shall be permitted to move freely at the Montrose Plant Property in order to conduct actions which EPA determines to be necessary.

19. Paragraphs 17 and 18 in no way limit any right of inspection and/or entry available to EPA and/or DTSC pursuant to applicable federal or state laws, regulations, permits, or prior agreements.

COVENANT NOT TO SUE FOR RESPONSE ACTIVITIES AND COSTS RELATING TO THE NEIGHBORHOOD AREAS, AND RESERVATION OF RIGHTS

20. Except as specifically provided in Paragraphs 21 and 22 of this Decree, the United States and DTSC each hereby covenants not to sue or to take any other civil or administrative action against the Released Parties to compel response activities relating to the Neighborhood Areas, or to recover Response Costs, including but not limited to, costs for studies and evaluations of the area covered by response activities under CERCLA Sections 106 and 107, 42 U.S.C. §§ 9606 and 9607, or pursuant to the California Hazardous Substance Account Act, California Health and Safety Code §§ 25300, et seq., or any other state statute or state common law. In addition, the United States and DTSC each hereby covenants not to sue or take administrative action against the Released Parties to compel response activities with respect to the Neighborhood Areas or recover Response Costs under the Resource Conservation and Recovery Act ("RCRA") Sections 3008(h), 3013, or 7003, 42 U.S.C. §§ 6928(h), 6934, or 6973, or California Health and Safety Code § 25187. DTSC hereby further covenants not to sue or take administrative action against the Released Parties to compel response activities with respect to the Neighborhood Areas or to recover Response Costs under Section 7002 of RCRA, 42 U.S.C. § 6972.

21. The covenants set forth in Paragraph 20 pertain only to matters expressly specified therein, and extend only to the Released Parties. Any claim or defense which the United States or DTSC has against any other person or entity is expressly reserved. The United States and DTSC reserve, and this Decree is without prejudice to, all other rights and claims against Released Parties with respect to all other matters, including but not limited to, the following:

A. any and all claims against the Released Parties based upon or resulting from a failure to meet a requirement of this Decree;

B. claims for criminal liability;

C. claims for violations of any other federal or state law;

D. claims arising from the presence of a hazardous substance at any location outside of the Neighborhood Areas (except as provided for in prior consent decrees in this action with the Released Parties);

E. claims for natural resources damages with respect to the Neighborhood Areas; and

F. claims resulting from the release of hazardous substances from one or more Storage Cells during the DDT Defendants' Operations and Maintenance Period; and.

G. Claims resulting should the DDT Defendants fail to render the acceptances set out in Paragraph 8 (and where the DDT Defendants also refuse to implement the Operations and Maintenance Workplan) and EPA exercises its right pursuant to that Paragraph to perform the operations and maintenance work with respect to the Storage Cells.

22. A. In addition to the reservations set out in Paragraph 21, the United States and DTSC reserve, and this Decree is without prejudice to, the right to institute proceedings in this action or in a new action seeking to compel the Released Parties to take a response action or reimburse the United States or DTSC for additional Response Costs with respect to the Neighborhood Areas if, subsequent to the Date of Lodging of this Decree:

1. conditions at the Neighborhood Areas, previously unknown to EPA or DTSC, are discovered; or

2. information, previously unknown to EPA or DTSC, is received, in whole or in part,

and these previously unknown conditions or new information together with any other relevant information indicate that the Removal Actions set forth in the Removal Action

Memorandum and the actions required by the Section of this Decree called "Work to be Performed" is not protective of human health or the environment with respect to the Neighborhood Areas.

B. For purposes of this Paragraph, the information and the conditions known to EPA or DTSC shall include only that information and those conditions known to EPA and DTSC as of the date of the Removal Action Memorandum.

C. The Released Parties reserve their right to contest any claims allowed by Paragraphs 23.A.1 or 23.A.2 of this Decree, and the Released Parties do not by consenting to this Decree waive any defenses to such claims, except that the Released Parties covenant not to assert, and may not maintain, any defense based upon principles of waiver, res judicata, collateral estoppel, issue preclusion, claim splitting or other defense based upon the contention that the claims that are allowed by Paragraphs 23.A.1. or 23.A.2 of this Decree were or should have been brought in the instant case. In the event that the United States or DTSC institutes proceedings under Paragraphs 23.A.1 or 23.A.2 of this Decree, the Released Parties reserve the right to assert potential cross-claims, counterclaims or third party claims against the United States, DTSC, or any employee, officer, agency or instrumentality thereof, relating to such claims asserted by the United States or DTSC, and the agencies or instrumentalities thereof.

COVENANTS BY RELEASED PARTIES

23. A. Subject to Paragraph 23.C, the Released Parties hereby covenant not to sue and agree not to assert any civil or administrative claim or cause of action against the United States, or any employee, officer, agency or instrumentality thereof, and/or DTSC, or any employee, officer, agency or instrumentality thereof (but not including counties, cities, local governmental entities or sanitation districts) with respect to the Neighborhood Areas or this Decree, including but not limited to (1) any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established pursuant to 26 U.S.C. § 9507, under CERCLA Sections 106(b)(2), 111, 112 or 113, 42 U.S.C. §§ 9606(b)(2), 9611, 9612 or 9613, any claim pursuant to the Federal Tort Claims Act, 28

U.S.C. §§ 1346(b) and 2671 et seq., or any claim arising from any express or implied contract pursuant to 28 U.S.C. § 1346(a)(2) or 28 U.S.C. § 1491(a)(1), or any claim pursuant to the California Hazardous Substance Account Act, California Health and Safety Code §§ 25300, et seq., or under any other provision of law; (2) any claim with respect to the Neighborhood Areas under CERCLA Sections 107 or 113, 42 U.S.C. §§ 9607 or 9613, against the United States, including any department, agency or instrumentality of the United States, and/or DTSC, or any employee, officer, agency or instrumentality thereof (but not including counties, cities, local governmental entities or sanitation districts); or (3) any claims arising out of response activities at the Neighborhood Areas. Nothing in this Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

B. The Released Parties hereby covenant not to sue or to assert any civil or administrative claim or cause of action against any current or former owner or resident of a residential property in the Neighborhood Areas under Sections 107 or 113(f) of CERCLA (42 U.S.C. Section 9607 and Section 9613(f)), to the same extent the Released Parties are protected against claims in Paragraph 20. If any current or former owner or resident of a residential property in the Neighborhood Areas brings suit against one or more of the Released Parties relating to the Montrose NPL site, this covenant does not apply as against that plaintiff.

C. The covenants set forth in this Paragraph pertain only to matters expressly specified therein, and extend only to the United States and DTSC. The Released Parties reserve, and this Decree is without prejudice to, all other rights, claims and defenses against the United States or DTSC, including without limitation, in response to claims brought pursuant to Paragraph 22.

STIPULATED PENALTIES

24. A. If the payments required of the DDT Defendants by this Decree are not made by the dates specified in those Paragraphs, the DDT Defendants shall be liable, in

addition to the payments specified in those Paragraphs for the following amounts for each day of delay in payment:

Days of Delay	Payment Per Day of Delay
1-14	$ 5000/day
15-60	$ 7500/day
Beyond 60 Days	$ 10,000/day

B. In addition to the remedy provided for in the preceding Sub-Paragraph, if the payments required of the DDT Defendants by Paragraph 6 of this Decree are not made by the dates specified in Paragraph 6, the DDT Defendants shall be liable, in addition to the payments specified in Paragraph 6, for Interest.

25. If the DDT Defendants commit a violation of the Operations and Maintenance Workplan, as defined therein, the DDT Defendants shall be liable for the following amounts :

Days of Non-Compliance	Payment Per Day
1-7	$ 2,000/day
8-30	$ 5,000/day
Beyond 30 Days	$ 10,000/day

26. Payments due under this Section shall be paid by certified or bank check or warrant and disbursed, 50% to the United States and 50% to DTSC (the latter to be held in trust for the state signatories hereto), to the addressees identified in Paragraph 43. Stipulated penalties due under Paragraphs 24 and 25 are due within thirty (30) days following receipt by the DDT Defendants of a written demand by the United States or DTSC for payment of such stipulated penalties, and shall be made in accordance with instructions provided by the United States or DTSC to the DDT Defendants subsequent to the Date of Lodging of this Decree, with notice to the United States or DTSC.

27. In addition to the remedy provided for in this section, the DDT Defendants shall be liable, in addition to the payments specified in those Paragraphs, for any costs and attorneys fees incurred by Plaintiffs in enforcing the terms of this Decree.

28. Payments due under this Section shall be in addition to any other remedies or sanctions that may be available to the United States and DTSC on account of the DDT Defendants' failure to comply with the terms of this Decree.

DISPUTE RESOLUTION

29. Any dispute concerning the performance of the DDT Defendants' work obligations under this Consent Decree shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed 20 days from the time the dispute arises, unless modified by written agreement of the parties to the dispute. The dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute.

30. A. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA shall be considered binding unless, within 21 days after the conclusion of the informal negotiation period, DDT Defendants invoke the formal dispute resolution procedures of Paragraphs 30-32 by serving on EPA and DTSC a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the DDT Defendants.

B. Within 21 days after receipt of DDT Defendants' Statement of Position, EPA will serve on DDT Defendants its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. Within 7 days after receipt of EPA's Statement of Position, DDT Defendants may submit a Reply.

31. Formal dispute resolution for disputes will be accorded review on the administrative record under applicable principles of administrative law and shall be conducted pursuant to the procedures set forth in this Paragraph. Nothing in this Consent Decree shall be construed to allow any dispute by DDT Defendants regarding the validity of the Removal Action Memorandum provisions.

A. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Paragraph. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

B. The Director of the Superfund Division, EPA Region IX, will issue a final administrative decision resolving the dispute based on the administrative record. This decision shall be binding upon the DDT Defendants, subject only to the right to seek judicial review pursuant to this section.

C. Any administrative decision made by EPA pursuant to the preceding sub-Paragraph shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by the DDT Defendants with the Court and served on all Parties within 10 days of receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States may file a response to DDT Defendants' motion.

D. In proceedings on any dispute governed by this Paragraph, DDT Defendants shall have the burden of demonstrating that the decision of the Superfund Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record.

32. The invocation of formal dispute resolution procedures under Paragraphs 30 and 31 shall not extend, postpone or affect in any way any obligation of the DDT Defendants under this Consent Decree, not directly in dispute, unless EPA or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event that the DDT

Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in the Section of this Decree called "Stipulated Penalties."

VOIDABILITY

33. In the event that a final judicial determination is made by the District Court or, upon appellate review, by a higher court, that the entry of this Decree in its entirety shall not be approved, this Decree and the settlement embodied herein is voidable at the discretion of any Party and the terms hereof may not be used as evidence in any litigation or other proceeding.

COMPLIANCE WITH OTHER LAWS

34. This Decree shall not be construed in any way to affect any past, current or future obligation of the DDT Defendants or any other person or entity to comply with any federal, state or local law.

RETENTION OF JURISDICTION

35. The Court shall retain jurisdiction of this matter for the purpose of entering such further order, direction or relief as may be necessary or appropriate for the construction, implementation or enforcement of this Decree or other consent decrees.

AUTHORIZED REPRESENTATIVE

36. Each of the undersigned representatives of the DDT Defendants certifies that he or she is fully authorized to enter into the terms and conditions of this Decree and to legally execute and bind that party to this Decree.

37. This Decree may be executed in any number of counterparts, and each executed counterpart shall have the same force and effect as an original instrument.

MODIFICATION

38. The terms of this Decree may be modified only by a subsequent written agreement signed by all of the Parties signatory hereto, and approved by the Court as a modification to this Decree.

PUBLIC COMMENT

39. The Parties acknowledge that this Decree will be subject to a public comment period of not less than 30 days in accordance with 28 C.F.R. § 50.7. The Parties further acknowledge that this Decree may be the subject of a public meeting as specified in Section 7003 of RCRA, 42 U.S.C. § 6973. The United States and DTSC reserve the right to withdraw their consent to this Decree if comments received disclose facts or considerations which show that this Decree is inappropriate, improper or inadequate. DDT Defendants consent to the entry of this Decree by the Court without further notice.

EFFECT OF SETTLEMENT/CONTRIBUTION PROTECTION

40. Nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. Each of the Parties expressly reserves any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Neighborhood Areas (as defined herein) against any person not a Party hereto.

41. The Parties agree, and by entering this Consent Decree this Court finds, that the Released Parties are entitled, as of the Date of Entry of this Consent Decree, to protection from contribution actions or claims for "matters addressed" in this Consent Decree as provided by Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and all other provisions of federal or state statutes or of common law which limit or extinguish their liability to persons not party to this Decree. The "matters addressed" in this Consent Decree are Response Costs with respect to the Neighborhood Areas, as defined in this Consent Decree.

42. Each Released Party agrees that, with respect to any suit or claim for contribution brought by it for matters related to this Consent Decree (other than claims in this action), it will notify the United States and DTSC in writing no later than 60 days prior to the initiation of such suit or claim. Each Released Party also agrees that, with

respect to any suit or claim for contribution brought against it for matters related to this Consent Decree, it will notify the United States and DTSC in writing within 10 days of service of the complaint or claim upon it. In addition, each Released Party shall notify the United States and DTSC within 10 days of service or receipt of any Motion for Summary Judgment, and within 10 days of receipt of any order from a court setting a case for trial, for matters related to this Consent Decree (other than this action).

NOTICE

43. Any notice required hereunder shall be in writing and shall be delivered by hand, facsimile or overnight mail as follows:

Notice to the United States and the State:

As to the United States:
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
DO Case #90-11-3-511
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611

As to EPA:
John Lyons
Assistant Regional Counsel
U.S. EPA Region 9
Mailcode ORC3
75 Hawthorne St.
San Francisco, CA 94105

As to DTSC:
Barbara Coler
Division Chief, Statewide Cleanup Operations Div.
California Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710-2721

As to State of California:
Brian Hembacher
Deputy Attorney General
Environment Section
Office of the Attorney General
300 South Spring Street
Los Angeles, CA 90013
Facsimile No. (213) 897-2802

As to DDT Defendants:
President
Montrose Chemical Corporation of California
600 Ericksen Avenue, Suite 380,

Bainbridge Island, WA 98110

David Mulliken
Latham & Watkins
701 B Street, Suite 2100
San Diego, CA 92101

General Counsel
Chris-Craft Industries, Inc.
767 Fifth Avenue, 46th Floor
New York, N.Y. 10153

Peter Simshauser
Skadden, Arps, Slate, Meagher & Flom LLP
300 South Grand Avenue
Los Angeles, CA 90071

Joseph C. Kelly
Vice President and General Counsel
Stauffer Management Company
1800 Concord Pike
P.O. Box 15438
Wilmington, DE 19850-5438

Paul B. Galvani
Ropes & Gray
One International Place
Boston, MA 02110.

Each party to this Decree may change the person(s) it has designated to receive notice for that party, or the addresses for such notice, by filing a written notice of such change with the Court and serving said notice on each of the other Parties to this Decree.

ENTIRE AGREEMENT

44. This Decree constitutes the entire understanding of the Parties with respect to its subject matter. The fact that any party suggested language different from, or additional to, any language ultimately adopted in this Decree shall not be taken into account in interpreting this Decree.

EFFECTIVE DATE

45. This Decree shall be effective upon the date which this Decree has been entered by the United States District Court.

46. By signature below, all Parties consent to this Decree.

JUDGMENT

THE FOREGOING Consent Decree among Plaintiffs United States and DTSC, and the DDT Defendants is hereby APPROVED and ORDERED.

There being no just reason for delay, this Court expressly directs, pursuant to Rule 54(b), Federal Rules of Civil Procedure, ENTRY OF FINAL JUDGMENT in accordance with the terms of this Decree; each party hereto shall bear its own costs and attorney's fees except as specifically provided herein.

IT IS SO ORDERED

DATED: June 24, 2002

THE HONORABLE MANUEL REAL
UNITED STATES DISTRICT JUDGE

FOR THE UNITED STATES OF AMERICA:

WE HEREBY CONSENT to the entry of the Consent Decree in United States, et al. v. Montrose Chemical Corporation of California, et al., No. CV 90-3122-R, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

Dated: July 12, 2001

JOHN C. CRUDEN
Acting Assistant Attorney General
Environment & Natural Resources Division
United States Department of Justice

Dated: July 13, 2001

STEVEN O'ROURKE
Environmental Enforcement Section
Environment & Natural Resources Division
United States Department of Justice
Attorneys for the United States

FOR EPA:

Dated: 7/19, 2001 ~~2000~~

KEITH TAKATA
Director of the Superfund Division
United States Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dated: July 19, 2001 ~~2000~~

KATHLEEN JOHNSON
JOHN J. LYONS
MICHELE BENSON
Office of the Regional Counsel
United States Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

FOR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCE CONTROL:

WE HEREBY CONSENT to the entry of the Consent Decree in United States, et al. v. Montrose Chemical Corporation of California, et al., No. CV 90-3122-R, subject to the public notice and comment requirements of 28 C.F.R. § 50.7.

DATE: July 3, 2001

BARBARA COLER
Division Chief, Statewide Cleanup Operations Division, California Department of Toxic Substances Control, 700 Heinz Avenue, Suite 200, Berkeley CA 94710-2721.

FOR DDT DEFENDANTS AND RELEASED PARTIES:

WE HEREBY CONSENT to the entry of the Consent Decree in United States, et al. v. Montrose Chemical Corporation of California, et al., No. CV 90-3122-R.

CHRIS-CRAFT INDUSTRIES, INC.:

DATE: July 12, 2001 By: Brian C. Kelly
SIGNATURE

Brian C. Kelly
NAME (printed or typed)

Senior Vice President and General Counsel
TITLE (printed or typed)

AVENTIS CROPSCIENCE USA, INC.:

DATE: July 3, 2001 By: George Goodridge
SIGNATURE

George S. Goodridge
NAME (printed or typed)

Assistant Secretary
TITLE (printed or typed)

ATKEMIX THIRTY-SEVEN, INC.:

DATE: July 9, 2001 By: _____
SIGNATURE

Brian A. Spiller
NAME (printed or typed)
President, Stauffer Management Company LLC, successor by merger to Atkemix 37
TITLE (printed or typed)

MONTROSE CHEMICAL CORPORATION OF CALIFORNIA:

DATE: July 16, 2001 By: [signature]
SIGNATURE

Frank Bachman
NAME (printed or typed)

President
TITLE (printed or typed)

STAUFFER MANAGEMENT COMPANY

DATE: July 9, 2001

By: _____
SIGNATURE

Brian A. Spiller
NAME (printed or typed)

President, Stauffer Management Company LLC, successor by merger to Stauffer Management Company
TITLE (printed or typed)

IMPERIAL CHEMICAL INDUSTRIES PLC

DATE: _____ By: _____
SIGNATURE

MICHAEL HERLIHY
NAME (printed or typed)

GENERAL COUNSEL
TITLE (printed or typed)

ICI INTERNATIONAL INVESTMENTS, INC.

DATE:_____ By: _____
SIGNATURE

MICHAEL HERLIHY
NAME (printed or typed)

ATTORNEY-IN-FACT
TITLE (printed or typed)

ZENECA INC.

DATE: 7/3/01 By: Brian A Sullivan
SIGNATURE

BRIAN A SULLIVAN
NAME (printed or typed)

REG. MGR
TITLE (printed or typed)

ZENECA HOLDINGS, INC.

DATE: 7/3/01 By: _____
SIGNATURE

BRIAN A Sulter
NAME (printed or typed)

Gen. Mgr
TITLE (printed or typed)

STAUFFER CHEMICAL COMPANY

BY: AVENTIS CROPSCIENCE USA INC.

DATE: July 9, 2001 By: George S Goodridge
SIGNATURE

George S. Goodridge
NAME (printed or typed)

Assistant Secretary
TITLE (printed or typed)

RHODIA INC.

DATE: July 9, 2001 By: _____
SIGNATURE

John P. Donahue
NAME (printed or typed)

Senior Vice-President, General Counsel
TITLE (printed or typed) and Secretary

AVENTIS CROPSCIENCE USA LP

DATE: July 3, 2001 By: George S Goodridge
SIGNATURE

George S. Goodridge
NAME (printed or typed)

Assistant Secretary
TITLE (printed or typed)

ATTACHMENT 1

"Operations And Maintenance Workplan"

earth tech engineering and technology for the planet

OPERATIONS AND MAINTENANCE WORKPLAN STORAGE CELLS

Montrose Superfund Site
Torrance, California

Prepared for

Montrose Chemical Corporation of California
600 Ericksen Avenue, NE, Suite 380
Bainbridge Island, Washington 98110

Prepared by

Earth Tech
100 West Broadway, Suite 240
Long Beach, California 90802

June 2001

OPERATIONS AND MAINTENANCE WORKPLAN STORAGE CELLS

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Long Beach, California 90802

June 2001

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Section 1.0

1.0 INTRODUCTION

From April 1999 through May 2000, the Environmental Protection Agency (EPA) performed three phases of environmental investigation in the residential neighborhoods surrounding the former Montrose Chemical Corporation facility in Los Angeles, California. After collecting more than 1,700 soil samples from more than 180 residential properties, EPA has determined that portions of 12 residential properties located along Kenwood Avenue contain DDT concentrations in excess of health risk-based action levels.

Under the terms of the Request for Removal Action for Kenwood Storm Water Drainage Pathway (EPA Removal Action Memorandum) dated June 8, 2001, the Memorandum of Understanding (MOU) dated June 19, 2001 and the subsequent Consent Decree, the EPA will excavate up to 12,000 cubic yards of DDT-impacted soil along Kenwood Avenue and store the soil and associated debris at the Montrose Superfund Site (Site) located at 20201 South Normandie Avenue, Los Angeles, California. The soil and debris will be stored at the Site in up to 7 storage cells. Each storage cell will contain the DDT-impacted soil by sealing the material within a geomembrane liner. A bottom geocomposite liner system and a berm will provide secondary containment. A geomembrane sheet placed over the geomembrane liner and berm will provide stormwater run-off protection. Provided Montrose has either (1) approved the construction and filling of the storage cells under the terms of the Consent Decree or (2) disapproved the construction or filling of the storage cells, but otherwise agreed to assume this responsibility, Montrose will perform operation and maintenance (O&M) for the storage cells consistent with this Workplan for a period of up to four years from the date of its approval of the storage cells or decision to assume the responsibility, or until the remedial actions for on/near-property soils have been selected and implemented, whichever is sooner.

This Workplan was prepared in compliance with Item No. 5 of the MOU which calls for development of an O&M plan for the storage cells consistent with all applicable or relevant and appropriate requirements (ARARs) identified in the EPA Removal Action Memorandum. This Workplan provides a description of the storage cells, a detailed plan of the inspection and routine maintenance activities, a contingency plan for use in the event of an emergency, a description of site security, and documentation and reporting procedures.

1.1 Description of the Storage Cells

As described above, up to 12,000 cubic yards of DDT-impacted soil and debris may be transported from the neighborhood areas to the Site for storage. The soil will be stored in 6 soil storage cells having dimensions of approximately 110 feet long x 100 feet wide with a maximum depth of 7 feet. The debris, consisting primarily of broken concrete and tree roots, will be stored in a similar cell with smaller dimensions (approximately 55 feet x 50 feet).

The Site is presently covered with a 4-inch thick asphalt cap. The storage cells will be installed on the surface of the asphalt cap that will serve as the subgrade for the cell and minimize the infiltration of surface water into the ground. Each storage cell will be constructed of the following components, listed from the bottom to the top of the cell:

- The bottom liner :
  - A 32-ounce geotextile layer,
  - A 45-mil reinforced polypropylene (RPP) geomembrane bottom liner, and
  - A geocomposite consisting of a high density polyethylene (HDPE) geonet sandwiched between two layers of 6-ounce non-woven geotextile fabric.
- The top liner
  - A 45-mil RPP geomembrane, and
  - A geocomposite consisting of HDPE geonet sandwiched between two layers of 6-ounce non-woven geotextile fabric.
- A drainage collection system, acting as a leachate collection and removal system (LCRS), located at the low point of the cell to facilitate drainage of liquid to the pipe:
  - A 4-inch diameter perforated HDPE collection pipe wrapped with 6-ounce geotextile and surrounded by drainage aggregate.

  - A solid 4-inch diameter HDPE pipe protruding out of the liners used to detect and remove leachate.

  - A 45-mil RPP pipe boot welded onto the RPP geomembrane liner cover.

- A liner leak detection system, installed below the top liner and above the bottom liner, and located at the low point of the cell to facilitate drainage of liquid to the pipe:

  - A 4-inch diameter perforated HDPE detection pipe wrapped with 6-ounce geotextile and surrounded by drainage aggregate.

  - A solid 4-inch HDPE pipe protruding out of the liners used to detect and remove leaked fluids.

  - A 45-mil RPP pipe boot will be welded onto the RPP geomembrane liner cover.

- A perimeter berm measuring 2 feet high with 2:1 slopes and a 10 feet wide base will surround the cell as a secondary containment.

- A 45-mil RPP liner cover will be placed over the cell and the berm to provide run-off protection over the cell. A secondary top liner, placed under the 45-mil RPP liner cover may be included to enhance leak protection.

- The RPP liner cover will be anchored by a sand tube along the base of the outer perimeter of the berm and 40-pound sand bags placed at 10-foot centers on the top of the berm.

The design drawings for the storage cells available from the EPA as of the date of this Workplan are attached as Appendix A of this Workplan. These drawings may be updated with a mutual consent of EPA and Montrose as the design is finalized. EPA will construct and fill the storage cells in accordance with these plans.

1.2 Performance Standards

The storage cell O&M performance standards (as stated in the MOU) are as follows:

(1) No hazardous substance(s) be released from any soil storage cell into the environment.

(2) All activities related to the O&M (including, but not limited to, emergency response and corrective action) of these storage cells comply with the ARARs identified in the EPA Removal Action Memorandum dated June 8, 2001 and any other applicable law, and

(3) The storage cells be operated and maintained in accordance with this Workplan.

This Workplan is designed to comply with the ARARs listed by EPA in the Action Memorandum as detailed below:

- O&M tasks for the storage cells, the LCRS, and the leak detection system will be performed in accordance with the standards and requirements for waste piles, as stated in the California of Code Regulations (CCR), Title 22, Sections 66264.250, 66264.251 and 66264.252.

- Storage cell LCRS and leak detection system monitoring and inspection will be conducted in compliance with the requirements of CCR 22, Sections 66264.15 and 66264.254.

- A contingency plan is presented in this workplan that includes response actions in compliance with the CCR 22, Section 66264.253 requirements. The contingency plan also includes other elements necessary for compliance with CCR 22, Sections 66264.51 through 66264.56.

- Site security will be implemented in compliance with the requirements of Title 22, Section 66264.14.

- The current Montrose site-specific Health and Safety Plan (HASP), dated August 1997 is incorporated by reference into this Workplan and is consistent with current Federal Occupational Safety and Health Administration (OSHA) requirements for hazardous waste operations [29 Code of Federal Regulations (CFR) 1910.120 (e) and (f) and CCR Title 8, Section 5192].

Section 2.0

2.0 INSPECTION PROGRAM

In accordance with CCR Title 22, Section 66264.254, the storage cells will be inspected weekly, at intervals not to exceed 7 days, and after storm events to detect evidence of the following:

(1) deterioration, malfunctions, or improper operation of run-on and run-off control systems (top geomembrane cover and berms);

(2) proper functioning of wind dispersal control systems, where present (e.g., sand bag materials and top geomembrane cover); and

(3) the presence of liquids in leak detection system in accordance with CCR Title 22, Section 66264.251(k).

The inspections will be documented on the Inspection and Maintenance Report form (Appendix B) and will be guided by the Inspection Checklist (Appendix C). The Inspection and Maintenance form has been developed as an exception report which contains sections to report any item not found to be in good condition, followed by a narrative section to advise of actions necessary or completed. A compilation of these forms will be periodically forwarded to the EPA as indicated below in Section 2.6. Emergency notifications will be handled by a separate procedure discussed in Section 4.0 (Contingency Plan).

2.1 Storage Cell Berm, Sand Tube And Sand Bags

A visual inspection will be performed around the perimeter of the storage cell berm including the side slopes, the sand tube around the base of the outer slope perimeter, the sand bags located on the top of the berm, and on top of the berm liner cover.

The visual inspection will include examination for the following:

- Deterioration, rips, punctures, and stress cracks on the sand bag covers, sand tube covers, and the berm liner cover and seams.

  - The sand tube and sand bags will be replaced or repaired, as needed, in accordance with sand bag and tube manufacturers' recommendation. The berm liner cover will be repaired in accordance with Section 3.2 of this Workplan.

- Uneven surfaces or defects that could compromise the effectiveness of the containment function of the berm or impede proper water run-off function or ponding of liquids on the top and slopes of the berm, (e.g., indentations from tire tracks indicating unauthorized entry on the Site, collapse of the berm, protrusions from under the surface).

  - Repairs will be performed in accordance with Sections 3.1 or 3.2 of this Workplan.

- Seepage or discharge that could indicate liner leakage around the base perimeter of the berm.

  - In the event of leak, response actions will be implemented in accordance with Section 4.0 of this Workplan.

- Exposed sand or soil that could cause visible particulate dust.

  - The sand or soil will be consolidated and containerized, as necessary.

2.2 Liner

The top RPP liner will be visually inspected for evidence of the following:

- Deterioration, rips, punctures, stress cracks on the liner cover and seams.

  - Special care will be taken to inspect the seams of the liner for any pulling or parting. Repairs will be performed in accordance with Section 3.2 of this Workplan.

- Uneven surfaces or defects (e.g., indentations from tire tracks indicating unauthorized entry on the Site, collapse of the berm, protrusions from under the surface) that could potentially compromise or impede proper water run-off from the top and slopes of the soil storage cell and cause ponding of liquids.

- Repairs may include sub-liner re-work, as discussed briefly in Section 3.1 of this Workplan.

2.3 Leachate Collection and Removal System (LCRS) and Leak Detection System

Pipe boots and the 4-inch HDPE LCRS and leak detection riser pipes will be visually inspected for evidence of the following:

- Deterioration or malfunctions of the welded geomembrane boot.
  - If any damage exists, the boot will be replaced or repaired in accordance with Section 3.2 of this Workplan.
- Leaks around seams and the top of the RPP liner cover near the pipe boot.
  - If any damage is evident, repairs will be performed in accordance with Section 3.2 of this Workplan.
- The conditions of gaskets around the pipe clamp and inside locking cap.
  - If cracked or damaged, the gasket will be removed and replaced.
- Cracks or broken pipe.
  - The HDPE pipe will be repaired or replaced in accordance with the HDPE pipe manufacturer's recommendation.

The presence of liquid will be monitored in the pipe risers using an electronic depth gage or a dipstick. The measurements will be recorded on the Inspection and Maintenance Report form. The storage cell system is designed to accommodate a maximum of 1 foot of hydraulic head (i.e., liquid) above the bottom liner. Therefore, as a conservative procedure, routine maintenance will include removal of liquids when the level in the detection pipe exceeds 3 inches. The liquid will be removed

to the extent practical with commonly available pump equipment according to the following procedures:

- For liquid detected in the LCRS:
  - Pump water out of the cell into DOT-approved 55-gallon drums, placed on double containment pallets.
  - Collect a liquid sample for analysis of pesticides using EPA Method 8081A.
  - Temporarily store liquid on Site pending characterization and disposal (see Section 3.5 of this Workplan).
  - Record the amount of liquids removed from each LCRS on the Inspection and Maintenance Report form.
- Liquid detected in the leak detection system implies a potential leak of the top liner initiating the Contingency Plan. Subsequent actions include liquid removal and notification of the appropriate parties according to Section 4.2 of this Workplan.

2.4 Perimeter Fence

The perimeter fence will be inspected for evidence of unauthorized entry onto the Site and/or damage due to vandalism.

Observations will be recorded on the Inspection and Maintenance Report form and damage will be repaired promptly by a fencing subcontractor.

2.5 Storm Events

After a storm event, inspections will be conducted in the same manner as described above for the routine weekly inspections.

2.6 Submittals To EPA

The weekly Inspection and Maintenance Report forms will be compiled quarterly and submitted to EPA. This procedure assumes that information provided by the forms is non-emergency in nature, i.e., routine observations and maintenance. Emergency communications are covered by a separate procedure discussed in Section 4.0 (Contingency Plan).

Section 3.0

3.0 MAINTENANCE PROGRAM

The weekly inspections discussed in Section 2.0 will be performed as a preventative measure to identify items needing repair or replacement. The following Sections describe routine maintenance procedures for the sub-liner (berm and soil pile), the top liner cover, the LCRS and leak detection pipes and the RPP pipe boots. Also described is the collection of water and soil samples for analysis, waste management, and perimeter fence maintenance. Maintenance procedures performed will be recorded on the Inspection and Maintenance Report form. If observed damage results in releases of DDT-impacted soil, dust, or liquid, procedures outlined in Section 4.0 of this Workplan will be implemented.

3.1 Sub-liner Damage

If weekly inspections indicate potential sub-liner damage, as indicated in Sections 2.1 and 2.2, sub-liner repairs will be implemented. Because of the extent of work that would be required to repair sub-liner damage, details for sub-liner repair activities would be addressed in a separate workplan focused on the specific aspects of the problem, if needed. For the purpose of this Workplan, the following general procedures will be followed to repair sub-liner damage:

- For sub-liner damage of the soil pile, the liner cover and the top liner will be removed to expose sub-liner and repairs will be made as necessary. The surface will then be regraded to the design specifications. After the pile is regraded, the top liner and liner cover will be replaced and anchored.

- For sub-liner damage to the berm, the berm liner cover will be removed and the berm restored to original conditions. After repairs are completed, the berm liner will be replaced and anchored.

3.2 Liner Repairs

Damage to the liner, including tears, holes, blisters, and areas with undispersed raw materials or foreign material contamination, will be patched using a thermal welding method (either hot air or hot

wedge). Each patch will have rounded corners with a radius of approximately 3 inches and extend a minimum of 6 inches beyond the edge of the defects. Each patch will be constructed of the same material as the RPP geomembrane being repaired. Prior to patching, the overlap will be cleaned of all dust, dirt or foreign debris, and dried using only clean, soft cloths and deionized water. Extra care will be taken to assure that the seaming area remains uncontaminated during windy conditions.

Once the damaged area is prepared for repair, hot air welding will be used to weld seams of the patch to the existing liner. Hot air welding is recommended since the hot air blows out the contaminants that become lodged in the repair area. However, if hot wedge welding is used, extra care will be taken to ensure the area to be welded is contaminant free. Whichever thermal welding method is used, the equipment will be operated in accordance with the equipment manufacturer's instructions.

Spot welding or seaming will be used to repair small tears or other localized flaws. All repairs will be non-destructively tested according to liner manufacturer's recommendation. Additionally, welding equipment operation parameters including, but not limited to, the date, time, start and finish temperature of the equipment, etc. will be recorded as an attachment to the Inspection and Maintenance Report form.

3.3 LCRS and Leak Detection System

Damage of the pipe boots observed during the weekly inspections, especially around the penetration of the liner, will be repaired as described in Section 3.2 of this Workplan.

If HDPE pipe damage is observed during inspection (e.g., cracks), the pipe will be cut and replaced by fusion welding according to the HDPE manufacturer's recommendations.

Liquid detected in the LCRS will be pumped after reaching 3 inches, measured from the bottom of the sump, as described in Section 2.3. The liquid waste will be temporarily stored on site in 55-gallon drums placed on double containment pallets pending characterization for disposal.

3.4 Sample Collection And Analysis

Collection and analysis of soil and/or liquid samples may be required over the course of this program for waste characterization related to pumpage of accumulated water in the cells or a release. Sample collection and handling activities will be conducted in accordance with the health and safety procedures outlined in the site-specific HASP. Soil and liquid samples will be analyzed for pesticides using EPA Method 8081A using chain-of-custody forms to document the transference of all samples.

3.5 Waste Management

Both solid and liquid wastes will be containerized in DOT-approved 55-gallon drums placed on double containment pallets and temporarily stored on site pending waste characterization. If the DDT is detected, the drum(s) will be handled and disposed of as hazardous waste. Otherwise, the contents in the drums will be considered nonhazardous waste and disposed of accordingly. Waste will be disposed of within 90 days.

3.6 Perimeter Fence Maintenance

The fence will be maintained in good order to prevent unauthorized entry onto the Site. If fence damage is observed during the weekly inspections, a fence subcontractor will be contacted to repair the damage immediately.

4.0 CONTINGENCY PLAN

Under normal conditions, no personnel are present at the Site and routine inspection and maintenance are performed on a weekly basis. During extremely rainy or windy conditions, brief daily site inspections and monitoring of LCRS will be conducted during normal business hours (Monday through Friday). However, emergency situations causing potential hazards may arise during the life of the storage cells. Outlined in this Section are the primary hazards associated with the Site along with a description of the administrative and engineering controls designed to prevent or mitigate these hazards.

4.1 Emergency Response And Notification Of Release

If any incident or change in Site conditions during the Montrose O&M period causes or threatens to cause a release of hazardous substances from the storage cells that presents an endangerment to the public health, welfare or the environment, Montrose shall immediately take all appropriate actions. Montrose shall take these actions in accordance with all applicable provisions of the Consent Decree, including the Site HASP and this Workplan to prevent, abate, or minimize such release or threatened release.

In the event of an accident or change in site conditions that causes or threatens such a release as described above, Montrose shall also immediately notify the following individuals of the incident or site conditions:

- EPA's On-Scene Coordinator (OSC), or in the event of his/her unavailability, shall notify the EPA Regional Duty Officer (See Contact List, Section 4.2),
- EPA Regional Emergency 24-hour Spill Phone Line (See Contact List, Section 4.2)
- National Response Center (See Contact List, Section 4.2)

In the event of an actual release of hazardous substance from the storage cells, Montrose shall immediately notify the following individuals:

- EPA's OSC [or EPA Regional Emergency 24-Hour Spill Phone Number] (See Contact List, Section 4.2)

- National Response Center (See Contact List, Section 4.2)

Montrose shall submit a written report to EPA within seven (7) days after the release, setting forth the events that occurred and the measures taken, or to be taken, to mitigate any release or endangerment caused or threatened by the release and to prevent reoccurrence of such an incident or release. This reporting requirement is in addition to any reporting required under CERCLA Section 103(c) and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. Sections 11001 et seq..

4.2 Emergency Contacts

In the event of a release that poses a significant environmental hazard, emergency personnel will be notified by telephoning 911. Personnel assigned to perform site support will work in cooperation with fire department officials and other involved agencies to mitigate, investigate, and correct the cause of the release.

The following is a list of emergency contacts in the event of an emergency at the Site:

Emergency Response (Medical, Fire, Environmental)	911
EPA OSC, Dennis Geiser	415-744-2147 Office
EPA Regional Duty Officer [24-hour Spill Phone Line]	415-744-2000
National Response Center	800-424-8802
Property Representative, Frank Bachman, Montrose	206-780-9840 Office
Facility Manager, Mr. Brian Dean, Earth Tech	562-951-2212 Office 562-918-2478 Pager

4.3 Training

All site personnel will be trained in the Site HASP, site-specific hazardous materials handling, and personal protective equipment (PPE) requirements. Additionally, personnel repairing the liners will be properly trained in the welding equipment operating procedures. All personnel working at the site will have received the OSHA 40-Hour HAZWOPER training, and must have had the OSHA 8-hour refresher training within the past 12 months. Site visitors are also required to be 40-Hour HAZWOPER certified, unless accompanied by site personnel who are HAZWOPER certified.

4.4 DDT-Impacted Liquid

DDT-impacted liquids may be encountered at the Site due to the presence of liquid in the leak detection system and seepage, discharge or a stream of liquid observed around the perimeter of the base perimeter of the berm of the soil storage cells. To prevent leaks from the soil storage cells, weekly inspections are performed to measure for the presence of liquid in the leak detection system and visually inspect for the presence of liquid around the base of the berm. Additionally, containment berms and a bottom liner provide secondary containment for the soil pile to help mitigate potential harm to people, property and the environment.

The presence of liquid in the leak detection system would not be considered a serious environmental hazard since the storage cells are constructed with double containment as outlined in Section 1.1. However, as discussed in Section 2.3, the storage cell system is designed to accommodate a maximum of 1 foot of liquid above the bottom liner. Routine maintenance will include removal of liquids to the extent possible with commonly available pump equipment when the level in the detection pipe exceeds 3 inches. The liquid will be stored in 55-gallon drums placed on double containment pallets and temporarily stored on Site pending characterization for disposal.

Liquid present around the base perimeter of the berm could indicate a leak in the bottom liner system, resulting in necessary abatement procedures. Response actions and notifications will be implemented in accordance with Section 4.1 of this Workplan. The following corrective actions would be performed to mitigate the cause of the leak:

- Small seepage or discharge will be soaked up using absorbent pads. The pads will subsequently be stored in drums placed on double containment pallets and temporarily stored on Site pending characterization for proper disposal.

- Larger volumes of water that cannot be contained using absorbent pads will be contained with a temporary berm and removed using a vacuum truck or sump pump. The liquid will be transferred to drums placed on double containment pallets and stored on site pending characterization for proper disposal.

4.5 DDT-Impacted Soil and/or Dust

Potential hazards associated with DDT-impacted soil and/or dust include release of dust into the atmosphere due to a catastrophic failure of the top cover liner, which may be caused by high winds or vandalism. Performing daily inspections of the storage cells during adverse weather conditions when winds exceed 30 miles per hour (mph) will mitigate this potential hazard. During these inspections, liner anchors around both the perimeter base of the berm as well as the top of the berm will be inspected to minimize potential of such a release. To deter vandalism, extra security features as described in Section 5.0 will be included on the fence. Response actions and notifications will be implemented in accordance with Section 4.1 of this Workplan.

In the event of a DDT-impacted soil release, personnel will wear appropriate personal protective equipment (PPE) including a dust mask, gloves and goggles and perform the following abatement activities:

- Cover the exposed soil in the soil storage cell with plastic sheet.

- Clean up residual soil and place back into in soil storage cell.

- Replace or repair the top liner over the soil storage cell and anchor the top liner.

Section 5.0

5.0 SECURITY

At the completion of the storage cell construction, the existing Site perimeter security fencing will be upgraded to prevent unknowing entry and minimize the possibility for unauthorized entry onto the Site. The fence will line the site perimeter (approximately 3,500 feet) and consist of an 8-feet high wrought iron fence along Normandie Avenue (approximately 1,200 feet) and an 8-feet high chain-link fence around the remainder of the Site perimeter. Additional security features include razor ribbon on the top of both types of fences, a mid-strap on the wrought iron fence to prevent the rails from being spread apart, a heavy 9-gauge chain link fence with a bottom reinforcement bar to prevent the fence from being bent, and dual drop rods on the front gates.

Section 6.0

6.0 HEALTH AND SAFETY

A site-specific HASP has previously been prepared for site access, which identifies potential hazards associated with the Site. This HASP is consistent with current Federal Occupational Safety and Health Administration (OSHA) requirements for hazardous waste operations [29 Code of Federal Regulations (CFR) 1910.120 (e) and (f) and CCR Title 8, Section 5192]. A copy of the HASP will be kept by the Site Manager during the O&M program. All O&M activities will be conducted in accordance with this HASP.

Section 7.0

7.0 DOCUMENTATION AND REPORTING

7.1 O&M Documentation

During weekly inspections, a checklist (Appendix C) will be used to ensure that all components of the soil storage cells are inspected. Results of inspections and O&M activities conducted will be recorded on the Inspection and Maintenance Report form provided in Appendix B. At a minimum, the following information will be recorded on the Inspection and Maintenance Report form:

- Date, Time begin, Time end, Inspector,
- Condition of component inspected,
- Amount of liquid measured in the LCRS of each soil storage cell,
- Amount of liquid removed from the LCRS of each soil storage cell,
- Quantity of samples collected for laboratory analysis, description of liquid collected (clear, etc.),
- Description of type of repairs, location, type of material(s) consumed to perform repair,
  - For liner repairs, a record of operating parameters of welding equipment including time, start and finishing temperature of the welding equipment, nondestructive test results of the repair will be provided as an attachment to the standard form.
- Items repaired and replaced, and
- General observations.

7.2 Documentation Accessibility

Copies of the HASP, the O&M schedule, Inspection Checklist provided in Appendix C, Inspection and Maintenance Report forms, and this Workplan will be kept accessible to field personnel at all times through the Site Manager.

7.3 Reports Related To Implementation Of the Contingency Plan

In the event of an emergency, the Contingency Plan will be initiated and documentation and reporting procedures listed in Section 4.0 of this Workplan will be implemented.

Section 8.0

8.0 NOTICE OF VIOLATIONS AND VIOLATIONS OF THE WORKPLAN

EPA will provide Montrose written notice of any alleged non-compliance with the requirements of this Workplan. Any non-compliance remedied within 5 days after receipt of written notice from EPA, or remedied within 24-hours after receipt of written notice from EPA in the event of an emergency, shall not constitute a violation of this Workplan. For the purposes of the Consent Decree and the imposition of Stipulated Penalties thereunder, a violation of this Workplan occurs only if Montrose fails to correct a condition of non-compliance with the Workplan within five-days (or 24 hours in the event of emergencies) after receipt of written notice from EPA

Appendix A

APPENDIX A

Design Drawings

PARTIALLY SCANNED
OVERSIZE ITEM (S)

See Document # 13/128
for partially scanned image(s).

For complete version of oversize document(s),
see paper copy.

Appendix B

APPENDIX B
Inspection and Maintenance Report Form

Weekly Inspection and Maintenance Report

Montrose Superfund Site, Torrance, California

Inspection Date: _____

Inspector: _____

Storage Cells

Cell No.	Inspected Item	Good Condition	Exception or Observation Notes
1	Berm, Sand Tube and Sand Bags		
	Liner Cover		
2	Berm, Sand Tube and Sand Bags		
	Liner Cover		
3	Berm, Sand Tube and Sand Bags		
	Liner Cover		
4	Berm, Sand Tube and Sand Bags		
	Liner Cover		
5	Berm, Sand Tube and Sand Bags		
	Liner Cover		
6	Berm, Sand Tube and Sand Bags		
	Liner Cover		
7	Berm, Sand Tube and Sand Bags		
Debris Cell	Liner Cover		

LCRS and Leak Detection System

Cell No.	Inspected Item	Good Condition	Height of Liquid*	Exception or Observation Notes
1	LCRS (pipe, pipe boot)			
	Leak Detection (pipe, pipe boot)			
2	LCRS (pipe, pipe boot)			
	Leak Detection (pipe, pipe boot)			
3	LCRS (pipe, pipe boot)			
	Leak Detection (pipe, pipe boot)			
4	LCRS (pipe, pipe boot)			
	Leak Detection (pipe, pipe boot)			
5	LCRS (pipe, pipe boot)			
	Leak Detection (pipe, pipe boot)			
6	LCRS (pipe, pipe boot)			
	Leak Detection (pipe, pipe boot)			
7 Debris Cell	LCRS (pipe, pipe boot)			
	Leak Detection (pipe, pipe boot)			

* The detected height of liquid is measured from the bottom of the sump in inches.

Weekly Inspection and Maintenance Report
Montrose Superfund Site, Torrance, California

Security

Item No.	Inspected Item	Good Condition	Exception or Observation Notes
1	Fencing		
2	Gate		

Routine Maintenance Performed

Liquids Removed	
Cell Number	Volume Removed (gal.)

Miscellaneous

Exception and Observation Notes

Item Number	

Action Items and Follow-up From Previous Reports

Item	

Appendix C

APPENDIX C
Inspection Checklist

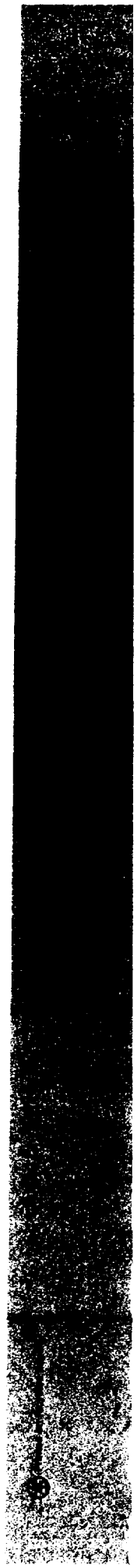
Storage Cell Inspection Checklist
Montrose Superfund Site, Torrance, California

Description	Activity		Frequency			
	Inspect	Monitor				
	Visual	Liquid	Weekly	After a Storm[1]	After a Wind Event[2]	As Needed
Soil Storage Cell Structure						
Berm	X		X	X	X	
Slopes	X		X	X	X	
Top of liner	X		X	X	X	
Sand Tube Anchor	X		X	X	X	
Sand Bags	X		X	X	X	
LCRS						
HDPE Pipe	X		X	X		
RPP Pipe Boot	X		X	X		
Liquid Level		X	X	X		
Remove Liquid				X		X
Leak Detection System						
HDPE Pipe	X		X	X		
RPP Pipe Boot	X		X	X		
Liquid Level		X	X	X		
Remove Liquid				X		X
Grounds						
Asphalt Cap	X		X	X	X	
Fence	X		X	X		
For Leaks						
Base of Berm	X			X		

Notes:

(1) In addition to weekly inspections, inspect liner cover for ponding and monitor for presence of liquids after a storm event.

(2) In addition to weekly inspections, inspect top liner cover to ensure that liner is still intact after a wind event when wind speeds exceed 30 miles per hour.



EARTH TECH

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ATTACHMENT 2
"Removal Action Memorandum"

ACTION MEMORANDUM

Request for Removal Action for Kenwood Storm Water Drainage Pathway

Montrose Chemical Superfund Site (CAD008242711)
Los Angeles County, California

FROM: Jeff Dhont, Remedial Project Manager
EPA Region IX

TO: Keith Takata, Director, Superfund Division
EPA Region IX

June 8, 2001

I. Purpose

The purpose of this Action Memorandum is to request and document approval of the proposed removal action described herein. This Action Memorandum does not address all response actions necessary for the Montrose Chemical Superfund Site (see next section for context of this action).

Under the removal action requested by this Action Memorandum, EPA will remove soils from residential yards that are contaminated with the pesticide DDT. These soils were affected by historical storm water drainage from the former Montrose Chemical DDT manufacturing plant. The removal action requested by this Action Memorandum includes provision for temporary relocation of residents where requested, demolition of yard structures as needed, excavation of contaminated soil, backfill and compaction of clean soil, restoration of yards, appropriate disposal of contaminated soil and several types of sampling activities. This removal action will remove unacceptable long-term health risks to residents and will attain the Applicable or Relevant and Appropriate Requirements (ARARs) identified herein for this action.

II. Site Conditions, Background, and Context of this Action

Site Status:	NPL
CERCLIS ID:	0926
Site Name:	Montrose Chemical Superfund Site
Site ID:	CAD008242711
Category of Removal:	Time Critical

A. KEY DOCUMENTS

The documents considered by EPA in selecting the action requested by this Action Memorandum reside in the administrative record for this removal action, to be made available within 60 days of the signing of this Action Memorandum as provided at 40 C.F.R. §300.820(b)(1). However, the following key documents provide a primary foundation for the nature of the site, the extent of contamination, and the estimated potential health risks.

1. *Remedial Investigation Report Addendum, Residential Soils and Produce Investigation, Montrose Chemical Superfund Site, Los Angeles County, California*, April 2001. This document includes EPA's human health risk assessment for residential areas near the former Montrose Chemical plant, as Appendix K.

2. *Final Remedial Investigation Report for the Montrose Superfund Site, Los Angeles, California*, May 18, 1998. This document is amended by the document listed as (1) above and contains extensive discussions of Montrose operations and of the history of the storm water drainage pathway.

3. *Completion Report, Neighborhood Sampling Program, Montrose Chemical Corporation Superfund Site, Los Angeles, California*; November 1999.

The Remedial Investigation Report listed as (2) above covered contamination at and near the former Montrose plant property, groundwater contamination, and sewer contamination. A small number of early studies in neighborhood areas were also included. The Remedial Investigation Report Addendum listed as (1) above provides the majority of information about EPA's latest and most extensive investigations of soil and homegrown produce in residential areas for the Montrose Chemical Superfund Site.

B. BACKGROUND

The Montrose Chemical Corporation of California (Montrose) manufactured the insecticide diclorodiphenlytrichloroethane (DDT) at a chemical manufacturing plant located at 20201 South Normandie Avenue in Los Angeles County, California, from 1947 to 1982. Montrose produced DDT at the former plant twenty four hours per day, seven days a week for approximately thirty-five years. During that time, Montrose manufactured more than 1.6 billion pounds of DDT at the Normandie Avenue plant property. Montrose also ground DDT into wetable powders at this location. Stauffer Chemical Company, one of Montrose's parent corporations, also operated, until 1963, a small plant at the Montrose plant property for manufacturing benzene hexachloride (BHC), another pesticide. Stauffer Chemical also conducted some experiments on the alpha and beta isomers of BHC at the Montrose plant property. The Montrose plant was dismantled and levelled in 1984 and the Montrose plant property is currently fenced and covered with asphalt.

Significant quantities of DDT and other hazardous substances were released as a result of Montrose's operations. See US EPA, Final Remedial Investigation Report for the Montrose Chemical Superfund Site, Section 1.3 (Site and Operational History) (May 1998). Today, the Montrose plant property remains significantly contaminated with DDT and other hazardous substances. Additionally, the portion of the storm water pathway adjacent to the Montrose plant property (e.g. the Jones Ditch and Normandie Avenue Ditch) remain contaminated with DDT and other hazardous substances. Since the late 1980's, these areas have been covered by asphalt to prevent the release of DDT into the current storm water pathway.

DDT and monochlorobenzene, one of the raw materials for making DDT, as well as other hazardous substances, entered the environment from the former Montrose plant operation by a variety of ways and with a variety of ultimate contaminant fates. EPA has been investigating, evaluating, and, where necessary, taking response actions for the following types of hazardous substance contamination which came to exist as a result of the operations of the former Montrose plant:

1. DDT, BHC and other contamination in soils at the former plant property and surrounding industrial properties;

2. Dense non-aqueous phase liquid (DDT dissolved in monochlorobenzene) in soils under the former plant property and extending down below the water table under the former plant property;

3. Dissolved groundwater contamination which extends through as many as six hydrostratigraphic units and to a distance of up to 1.3 miles from the former Montrose plant property;

4. Waste materials in the sanitary sewer as a result of discharges to the sewer system during Montrose's operations;

5. DDT and BHC in residential soils as a result of aerial dispersion of dust from the former Montrose plant property;

6. DDT and BHC in historical storm water drainage pathways, some of which lie in residential yards near the former Montrose plant property;

7. DDT and BHC in fill materials which were deposited in what came to be residential areas;

8. DDT in the *existing* storm water drainage pathway, including the Kenwood Drain, the Torrance Lateral, the Dominguez Channel, and the Consolidated Slip and Los Angeles Harbor;

9. DDT on the ocean floor off the coast of Palos Verdes ("the Palos Verdes Shelf") which arrived there as a result of discharge from the sanitary sewer outfall.

Montrose's operations at 20201 Normandie resulted in releases of DDT in surface water runoff to the natural drainage pathway. From 1947 until the mid-1960's, the storm water pathway that began at the Montrose plant property included an unimproved ditch on the west side of Kenwood Avenue (which was known as Maple Street for part of this period) from 204th Street to Torrance Boulevard[1] ("The Kenwood Ditch"). (See Figure 1a). Figure 1b depicts this ditch as a light dashed line. Up to at least 1953, acidic process wastewater contaminated with DDT and other hazardous substances, such as chlorobenzene, from Montrose's DDT manufacturing operations was occasionally released into this storm water pathway as the result of blockages in the sewer lines at the Montrose plant property. Correspondence and inspection reports from this time period indicate that Montrose acidic wastes were entering the Kenwood Ditch and ponding of these wastes was documented at the corner of Florence and Maple Streets, today the corner of 204th Street and Kenwood Avenue. See Figure 1a for some of the ponded areas; see also RI Addendum Plate 3 for a more complete depiction of such areas. During this time, Montrose was discharging approximately 156,000 to 233,000 gallons of wastewater per day into the sewer. As a result, the quantity of DDT contaminated waste water that may have been released to the storm water pathway during any of the blockages of Montrose's sewer connection would have been substantial.

[1]The existence and location of this storm water pathway has been determined based on EPA review of historical aerial photographs and other historical documents. In addition to documents submitted to EPA, several consultants retained by Montrose Chemical Company have verified that the storm water path from the Montrose plant property included the Kenwood Ditch during this time period.

DDT and other hazardous substances such as BHC were also released from the Montrose plant property during the 1947-1982 period in storm water.[2] DDT in storm water leaving the Montrose plant property originated from a number of sources including DDT grinding operations, DDT formulation operations, and DDT transport and storage activities. During heavy rains, over 200,000 gallons of storm water would be generated at the Montrose plant property. Storm water leaving the Montrose plant property originated solely from that property as there was no "upstream source."

Kenwood Avenue historically was and remains the lowest natural point in the local terrain. During the 1940s, 1950s and 1960s, historical photographs indicate areas of ponding along this street during heavy rains. Long-standing residents (living in the area for 20-40 years) have provided anecdotes to EPA from memory of times that Kenwood Avenue became a "river" and many yards along the street flooded. The east end of the yards on the west side of Kenwood Avenue had a natural depression known later as the "Kenwood Ditch," which ran north-south along the west side of Kenwood Avenue. The Los Angeles County Flood Control District maintained this ditch and held an easement for this purpose (See Figure 1b); driveways of residents typically had a culvert under them to allow water through. In the late 1960s and early 1970s, the Los Angeles County replaced the Kenwood Ditch with a buried concrete structure known as the "Kenwood Drain," four feet high and buried to depths up to twelve feet below ground surface. This drain is depicted on Figure 1b as a dark line. In the process of building the Kenwood Drain, a large amount of soil was moved around, out of, and back into residential yards. The Kenwood Drain excavation dwarfed the size of the original Kenwood Ditch. In some locations, the Kenwood Ditch may have simply been filled in; in others, it may have been excavated during the Kenwood Drain construction. This activity, and subsequent activity by some owners over the ensuing decades to bring soil in or move soil on their property, has resulted in a high degree of variability in where DDT-contaminated soil has come to be located along the west side of Kenwood Avenue.

Sampling results from EPA's recent (1999-2000) investigation along the west side of Kenwood Avenue and related properties provide further evidence that DDT and other hazardous substances originated at the Montrose plant property. Peak concentrations of DDT in the soil at these properties are as high as 6,700 parts per million (ppm) and are far above background concentrations (see subsequent discussions in this Action Memorandum). In addition, other

[2] Evidence of hazardous substances being released from the Montrose plant property in storm water can be found in Montrose Chemical and Stauffer Chemical Company records. In addition, EPA and State of California investigations in the early 1980s documented the release of significant concentrations of DDT from the Montrose plant property in storm water.

hazardous substances unique to operations at the Montrose plant property were detected in soil at these residential properties along Kenwood Avenue.[3]

C. CONTEXT OF THIS REMOVAL ACTION AND THE KENWOOD STORM WATER DRAINAGE PATHWAY

The removal action requested by this Action Memorandum addresses Montrose-related contaminants in soils due to the historical presence of the storm water drainage pathway known as the Kenwood Ditch. The location of this former ditch (and residual soils containing DDT from the former ditch) lies in residential front yards on the *west* side of Kenwood Avenue in the unincorporated Harbor Gateway Area of Los Angeles (near Torrance). One property on Torrance Boulevard and four properties on West 204th Street are also included in this drainage pathway, which extends from the Del Amo Alley on the north to Torrance Boulevard on the South.

In this Action Memorandum, the area formerly occupied by the Kenwood Ditch and also the area within present-day residential yards where soils are still influenced by the presence of the former Kenwood Ditch (i.e. have elevated levels of total DDT) is referred to as the ***Kenwood storm water drainage pathway.*** The vicinity of this pathway is shown on Figure 2. The properties that are traversed by this pathway, and therefore involved in this removal action, are shown in Figure 3. It should be noted that only part of the area of each involved property (generally within the front yards of properties on Kenwood Avenue) is subject to removal activity. The physical area encompassed by the Kenwood storm water drainage pathway within these properties, and therefore the area subject to the removal action, is defined by sampling and the location of the former Kenwood Ditch. The actual extent of this area will be defined in EPA's work plan for this removal action.

This removal action does <u>not</u> address:

- Montrose-related contamination in residential areas which may reside outside of the Kenwood storm water drainage pathway as discussed above;
- groundwater contamination;
- soil contamination;
- contamination of non-aqueous phase liquids at or near the former Montrose plant property;

[3]Specifically, chlorobenzene, which was used as a feedstock in the production of DDT was detected at two locations along the historic storm water pathway. Also, alpha and beta BHC were detected at certain locations along the historic storm water pathway on the west side of Kenwood Avenue (<u>See</u> US EPA, Remedial Investigation Report Addendum, April 2001).

- contamination in non-residential areas; or
- contamination in the sanitary sewer system.

Cleanup actions for these other areas, where appropriate, have been or will be selected by EPA in separate response action decision documents and addressed by other response actions.

D. SITE DESCRIPTION

1. Removal Site Evaluation

A brief summary of facts establishing that Montrose is the source of contamination in the Kenwood storm water drainage pathway was discussed in the previous section. There is more detail on these facts in the Remedial Investigation Report Addendum ("RI Addendum") and Final Remedial Investigation Report ("RI Report"), as fully cited above in Section II(A)(1) and (2) of this Action Memorandum. Additional source documents, including Montrose Chemical records, can be found in the administrative record for this removal action. An extensive history of the operations of the former Montrose Chemical plant is given in the RI Report, in Section 1.3 of that document. Only those investigation elements pertinent to this removal action are discussed below.

a. DDT Properties, Fate and Transport, and Investigation Protocols

DDT is an organochlorine pesticide which is highly stable in the solid phase and is persistent in the environment. It was used widely in the United States until its sale was banned in 1982. Depending on site conditions, DDT will slowly degrade into DDE and DDD, two compounds which have similar toxicities to DDT. DDT is not readily soluble in water and has a very low vapor pressure in environmental conditions, meaning it is not volatile. Particulate DDT has a very high affinity for adsorption to organic material in soil materials. Because of these properties, the primary fate and transport mechanisms by which DDT could have entered residential soils surrounding the former Montrose plant are: 1) by being carried as DDT dust or sorbed to soil dust (i.e. particulates) on wind which then settles into soils, 2) by being carried in drainage pathways as DDT particulates or sorbed to sediments, which then settle out into soils, and 3) by direct dumping of fill materials from the Montrose plant site.

In consultation with risk assessors, engineers, and statisticians, EPA designed separate investigation protocols to assess the degree to which DDT was present in residential areas from each of these three mechanisms. Samples were collected in sufficient numbers and in strategic locations to characterize each phenomenon being examined (e.g. aerial dispersion a.k.a. wind-blown dust, storm water drainage) and to evaluate potential human health risks as required by the

risk assessment. The results of the investigations are presented in the RI Addendum. EPA's investigations also targeted homegrown produce. Because it was known that DDT entered the storm water drainage from the Montrose plant site, and that this drainage entered the Kenwood Ditch, the Kenwood storm water drainage pathway was the primary drainage pathway examined in the investigation.

b. Phase I Residential Soils and Produce Investigation

In 1998 and 1999, as part of the Remedial Investigation for the Montrose Chemical NPL Site, EPA conducted Phase I of a Residential Soils and Produce Investigation (a.k.a. "Neighborhood Investigation") in a 30-square block residential area ("study area") to the southeast and southwest of the former Montrose plant property (See RI Report Addendum, Plates 3, 4 and 10). During Phase I of this investigation, EPA gathered more than 350 surface soil samples, randomly selecting four residences per block and taking 3 samples per residence sampled, in an effort to evaluate whether DDT was present due to aerial dispersion of DDT dust from the former plant at levels higher than in areas not near the former DDT plant. EPA also collected more than 70 surface soil samples in six background, or reference, areas to the north, northwest, west, southwest, and south of the former plant property (See RI Report Addendum, Plates 5 and 13). These areas were several miles from the former Montrose plant property. Also as part of the Phase I Investigation, EPA sampled homegrown produce including vegetables, fruits, and eggs. EPA also sampled borings to evaluate whether there was additional evidence of contaminated fill material from the Montrose plant property. In addition, some samples were collected in storm water drainage pathways.

c. Phase I Findings on Background DDT

Findings from data derived in the Phase I Investigation indicate that total DDT is present at low levels ubiquitously in both the six background areas as well as the 30-block study area near the former Montrose Chemical DDT plant[4]. (See RI Addendum, Plates 10 and 13) 100 percent of surface soil samples within the study area had some level of total DDT, while 91 percent of surface soil samples in the background areas had some level of total DDT. All residences, whether in the background area or the study area, had total DDT in at least one sample. Surface soil samples in the study area and not near the Kenwood storm water drainage pathway average approximately 1.8 ppm and ranged up to approximately 10 ppm (95th percentile) total DDT, whereas surface soil samples in the background area averaged 1.2 ppm and ranged up to approximately 6-8 ppm (95th percentile) total DDT.

[4]The term "total DDT" refers to the sum of the soil concentrations of all isomers of DDT and its metabolites, DDE and DDD. These compounds have similar toxicities and so are treated as a sum for the purpose of determining extent of contamination.

EPA has shown in the RI Report Addendum that the difference between the *average* of DDT concentrations in the background area and the *average* of DDT concentrations in the 30-block study area is statistically significant (See RI Addendum, Appendix J). However, the difference is exceedingly small from the standpoint of potential health risks. The reason that DDT may remain in background areas at levels similar to levels found in the 30-block study areas is that DDT was widely used in the United States until 1972 for agriculture, mosquito abatement, and for residential application to lawns and gardens. As DDT is persistent, it can still be seen in residential areas not near the Montrose plant site.

d. Phase I Findings on Kenwood Avenue, and at 20723 Kenwood Avenue

Initial Phase I data indicated that there were several residences along the west side of Kenwood Avenue where levels of DDT were significantly higher than the background samples and the samples taken in other parts of the 30-block study area. Such samples were generally on the order of several tens of ppm DDT. EPA determined that a second phase of investigation would be necessary to evaluate the nature and extent of the Kenwood Avenue contamination as a whole. One of the residences, 20723 South Kenwood Avenue, had levels of total DDT of up to 170 parts per million (ppm) in surface soils, initially, in Phase 1.

As part of Phase I, EPA conducted a more extensive investigation at 20723 Kenwood, without waiting for the planning and execution of the larger Phase II investigation for Kenwood Avenue. EPA installed and sampled 20 borings in a 20 foot grid and collected 10 surface soil samples at the 20723 Kenwood property. A total of 43 samples were collected from the property, including 5 surface soil samples from soils under the house. All samples were analyzed for total DDT.

The property at 20723 Kenwood Avenue is located on the west side of Kenwood Avenue, the second property north of Torrance Boulevard. Historic aerial photographs document that the unimproved drainage ditch (Kenwood Ditch), referenced above, passed through the eastern portion of this property in the 1940's, 1950's and early 1960's. These aerial photographs also document that storm water ponded in the low lying area of this property. Numerous accounts by long-standing residents in the neighborhood have corroborated that storm water used to pond so extensively at this property that at times the foundation was inundated to the base of the siding.

EPA found that about 2/3 of the front yard of the house, and an area covering about half of the north side yard of the house, has elevated levels of total DDT in the first 2-4 feet of soils. Upon more extensive sampling, EPA discovered levels of total DDT as high as 338 ppm in surface soils at the 20723 South Kenwood Avenue property. The affected area appears to be approximately 60 feet by 45 feet in size. Levels of DDT in the back yard and under the house were very low and do not pose a health risk.

e. Phase II Residential Soils and Produce Investigation

After a planning phase, EPA performed the sampling for the Phase II Soils and Produce Investigation in the Spring of 2000. The Phase II investigation focused largely, though not exclusively, on the Kenwood storm water drainage pathway. More than 1000 samples were collected during the phase II investigation, from more than 300 borings. Phase II was divided into two subphases, IIA and IIB. In Phase IIA, 7 transects of borings were placed and sampled perpendicular to the drainage pathway, spread evenly across the two blocks of Kenwood Avenue in the yards on the west side of the street. Each transect consisted of 4 borings spaced across the former easement within which the Kenwood Ditch was located, usually within 25 feet of the western edge of the current street. The County historically maintained an easement for maintaining the ditch for flood control, and its boundaries are known. Borings were sampled at surface, 2 feet below ground, and 4 feet below ground. Phase IIA also included borings along the storm water drainage path in historical ponding areas as identified by aerial photos and recounted by residents; these were sampled to a depth of 6 feet. Phase IIA also included many surface soil samples in the drainage pathway.

When Phase IIA samples showed relatively consistent elevated total DDT contamination in soils on the west side of Kenwood Avenue within the known historical storm water drainage pathway, EPA planned and performed Phase IIB. In Phase IIB, 23 yards along the storm water drainage pathway[5] were sampled. Each yard was sampled with a grid pattern of borings designed to evenly cover the area affected by the storm water drainage. Grid spacing was approximately 10-15 feet. The grids covered the area of the original easement for the ditch. Then, EPA continued to expand each grid westward toward the house until levels of DDT fell below about 10 ppm. Grid sampling was conducted so as to allow for property-specific human health risk calculations.

f. Summary of Phase II Results - Kenwood Storm water Pathway

The Phase II sampling (comprised of Phases IIA and IIB) revealed that soil concentrations of DDT in many of the front yards on the west side of Kenwood are elevated compared to soils not located on the Kenwood drainage pathway. Elevated DDT levels can be seen at both ends of the pathway (204th Street and Torrance Boulevard) and at multiple points in-between. There is significant variability in the concentrations of total DDT both laterally and with depth. The variability in DDT soil concentrations can be attributed, at least in part, to movement of soil:

[5] Two homes along the pathway could not be sampled because the owner refused to provide EPA with access to their property for the purpose of the sampling

- During the construction of the Kenwood Drain (which replaced the Ditch as the mode of flood control in the late 1960s); and

- By present or past residents during the intervening years (up to 55 years) between the time of the Montrose discharges containing the DDT and the present.

These factors account for the DDT being found intermittently, in some cases at depths other than those associated with the former Kenwood Ditch, or in areas west of the original storm water easement.

For the most part, it appears that the soil that was the bottom of the Kenwood Ditch no longer exists as a single intact structure and so it is more meaningful to discuss those residual locations within each yard where the DDT-contaminated soil from the Ditch has come to be located.

Phase II samples reveal that total DDT concentrations in soil in residential front yards on the west side of Kenwood Avenue vary from non-detect to 6,700 ppm. The following represent the frequency of concentrations on the west side of Kenwood as a whole, at all depths:

Out of approximately 1000 samples,

total DDT above 17 ppm was found in ..... 115 samples (11 %)
total DDT above 35 ppm was found in ..... 74 samples (7 %)
total DDT above 170 ppm was found in ..... 19 samples (2 %)
total DDT above 500 ppm was found in ..... 6 samples (0.6 %)
total DDT above 1000 ppm was found in ..... 4 samples (0.4 %)

Out of 23 yards sampled by EPA on the Kenwood storm water drainage pathway, the maximum total DDT concentrations (when considered yard-by-yard) were:

above 17 ppm in ..... 16 yards
above 35 ppm in ..... 14 yards
above 170 ppm in ..... 6 yards
above 500 ppm in ..... 6 yards
above 1000 ppm in ..... 4 yards

These results provide perspective to the sampling results. However, the yard-by-yard exposure point concentrations and health risk estimates calculated by EPA's human health risk assessment (Appendix K of the RI Addendum) are based on the distribution of total DDT in each particular yard. These values are more germane to potential human health risk than is the percentage of samples above a given concentration overall. Also, while the borings were placed with relatively good coverage throughout the affected area in each yard, it is not possible to

sample in every location. The human health risk assessment uses statistical techniques to account for this fact. These techniques adjust the exposure point concentration based on the number of samples taken and the variability in the data in any given yard. A summary of human health risk estimates are provided in this Action Memorandum in Section III.

The majority of the elevated total DDT concentrations in soil on the west side of Kenwood Avenue occur in soils at approximately 2 feet below ground surface. Concentrations of total DDT in subsurface soils (e.g. at 2 feet or 4 feet below ground surface) are, on average, higher than are concentrations in surface soils.

Soil samples taken from the east side of Kenwood Avenue, including samples in former ponding locations on the east side, indicate that total DDT concentrations are *not* higher in soils on the east side than in other areas outside the Kenwood storm water drainage pathway.

2. Physical Location

Kenwood Avenue is located in unincorporated Los Angeles County between the cities of Torrance and Carson. Properties on this street bear a Torrance address. This area is called the "Harbor Gateway."

The north end of Kenwood Avenue is one block south via Normandie Avenue and one block east via West 204th Street from the southeast corner of the former Montrose plant property at 20201 South Normandie Avenue. Kenwood Avenue is two blocks long and is bisected by Milton Avenue. Historically, storm water drainage with Montrose contaminants likely followed a similar path and/or travelled under Normandie Avenue to locations north of 204th Street where it flowed to the head of the Kenwood Ditch via an unimproved channel and culvert.

3. Site Characteristics

The area subject to this removal action applies to the Kenwood storm water drainage from the former Montrose DDT plant. This drainage lies primarily in front yards on the west side of South Kenwood Avenue. It also extends to one property on Torrance Boulevard and four properties on West 204th Street. This area lies in an unincorporated island of Los Angeles County, immediately adjacent to an industrial zone within the City of Los Angeles. This zone lies to the north and west. The former Montrose plant was part of this industrial zone. There are several refineries and chemical plants in the general vicinity. Current property values average approximately $140,000 - $180,000 without accounting for contamination. Kenwood Avenue lies in a largely working class neighborhood. Better than 60% of the residents are Latino; some speak only Spanish, others are bilingual. A large percentage of residents own their property. The owner resides at the property at 21 of the 25 homes within the storm water drainage pathway. The age of persons in the neighborhood varies; there are many young children and families as well as elderly persons. Similarly, the amount of time people have lived in the

neighborhood varies from less than a year to more than 30 years. Many families tend to be extended; that is, three generations may live in the same household.

Kenwood Avenue remains the lowest elevation in the surrounding terrain. Unlike adjacent streets in the neighborhood, Kenwood Avenue winds back and forth as if following a former creek bed. The property lots on the west side of the street are double lots; they are deep enough to have two houses built on them. Aerial photographs show that, in the 1950s, most of the lots had houses only on the back (western) portion of the lot. In the intervening period, second houses were built on the front (eastern) portion at about half of the lots. Today, many of the properties have more than one address on the same lot.

The front yards at five of the 11 properties with Kenwood addresses north of Milton Street, including 20429, 20433/20437, 20501, 20507/20509, and 20513 South Kenwood, have previously received soil brought in from outside sources. At each of these properties, the front yard does not slope significantly from the house to the street. A 2-4 foot high retaining wall separates the yard from the sidewalk at the front of the yard, with an attending drop in soil elevation. It appears that some residents used soil from the construction of the Kenwood Drain; others did not. EPA adjusted the sampling depth of its soil borings depending on the apparent depth of this soil material. At some properties, certain borings were extended from 4 to 6 feet below ground surface, and at one property, to 8 feet below ground surface.

There is a grass median between the sidewalk and the street in front of the properties on Kenwood Avenue north of Milton Avenue. South of Milton avenue, the median is alternately grass and concrete or brick. Most properties have driveways, usually constructed of concrete. Many properties are enclosed by fencing in the front yard.

The properties 1203 W. 204th Street and 1187 W. 204th Street are aligned perpendicular to the properties on the west side of Kenwood and are situated on either side of a former unimproved channel which carried water mixed with wastes from the Montrose site. In these two cases only, the former storm water drainage pathway runs from the rear to the front of the property. EPA's data indicate that most of the soil under the former channel, which was very narrow, was removed when the Kenwood Drain was installed at this location in the mid-1970s.

Properties on Kenwood Avenue south of Milton Avenue, between 20603 South Kenwood and 20627 South Kenwood, are built into a natural hillside. Some of these properties have terracing leading up to the front door of the house. The properties south of 20627 South Kenwood sit on relatively flat ground. Only four of 25 properties in the Kenwood drainage pathway do not have fencing in the front yard.

Best available information, including data from aerial photos, indicates that the Kenwood Ditch was located about 30 feet west of the former west edge of Kenwood Avenue. Kenwood Avenue has been widened in the intervening time period, and the Kenwood Drain was installed.

The Kenwood Drain lies under Kenwood Avenue in the northern portion of Kenwood Avenue, and then swings westward at about 20513 Kenwood, elbows back parallel to Kenwood Avenue, and then intersects each front yard on the west side of the street as it passes southward toward Torrance Boulevard. It appears that the former ditch was located within about 20-25 feet west of the present western edge of Kenwood Avenue. EPA has used as-built engineering drawings for the Kenwood Drain to locate the easement boundary for the Kenwood Ditch, which is another 10 feet west of the likely location of the Ditch.

4. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

The substances of concern for this response action are DDT, DDE and DDD; and also the all isomers of the pesticide BHC (manufactured by a small plant within the Montrose plant and operated by Stauffer Chemical Corporation, a parent of Montrose). All of these are "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14), and 40 C.F.R. Section 302.4 and Table 302.4.

The presence of DDT, DDE, DDD and isomers of BHC in the soil at 20723 Kenwood constitutes an actual or threatened release of hazardous substances into the environment, as defined by Section 101(22) of CERCLA, 42 U.S.C. Section 9601(22).

EPA's investigation shows concentrations of DDT in soil in yards on the west side of South Kenwood Avenue at concentrations up to 6,700 ppm. Substantial evidence documents the existence and route of the former storm water drainage pathway and that hazardous substances released by Montrose Chemical or Stauffer Chemical Company at the former Montrose plant property were released into this pathway. Most of the yards in the Kenwood residential storm water pathway have soils that exhibit measured total DDT concentrations (tens to hundreds of ppm, and in a few cases, over a thousand ppm) that clearly exceed background levels of total DDT (1-3 ppm, ranging up to 10 ppm).

5. NPL Status

The Montrose Chemical Superfund Site was placed on the NPL by rule in 1989.

6. Maps, Pictures and other Graphic Representations

Numerous figures, maps and graphics of Kenwood Avenue are located in the RI Addendum. Included are maps of the area, plots of all chemical data and boring locations, a "mosaic plot" of filled in concentration contours, a map showing calculated risk levels on a yard-by-yard basis, whisker plots of yard-by-yard data distributions, and many other evaluations.

E. OTHER ACTIONS TO DATE

As the removal action requested by this Action Memorandum addresses the Kenwood storm water drainage pathway, only actions relative to that pathway are discussed in this section.

1. Previous Actions

As previously mentioned, in July 1999, after completing the first phase of its investigation along Kenwood Avenue, EPA found levels of DDT at one property, 20723 Kenwood Avenue, at levels much higher than any other property in the neighborhood. While a second phase of sampling focused primarily on Kenwood Avenue was underway, EPA performed an expedited sampling of a grid of borings at the 20723 Kenwood Avenue property. Laboratory results from this sampling indicated total DDT levels up to 338 ppm. EPA approached the owners and tenants at the property and proposed to install a temporary cover over the portion of the property with elevated levels of DDT. The purpose of the cover was to prevent any possible continued exposure of the residents, including children, to surface soils in the portion of the yard that contained elevated levels of total DDT. EPA proposed to install the cover as a temporary measure until EPA could determine the nature and extent of total DDT contamination on the west side of Kenwood Avenue overall. EPA believed that a single action for the entire street would be more effective and efficient than taking an action at only one property. In the meantime, the temporary cover could provide the residents at 20723 South Kenwood with protection from DDT exposure.

After receiving the agreement of the owner and tenant to proceed, EPA installed a temporary cover consisting of a layer of black fine plastic mesh overlain by a layer of overlapped artificial turf, and held in place with approximately 1000 metal 6 inch staples which were hammered into place. The main cover measures about 45 feet by 60 feet, covering approximately 2700 square feet of soils with elevated total DDT levels (there is a smaller cover also next to the north side of the house). This cover prevents dust from rising to the surface and prevents direct contact with soils; at the same time it allows percolation of rainwater and prevents drainage problems posed by plastic covers. Approximately 100 cement paving stones were brought in to hold the cover down around the driveway. Gravel was brought in to cover the walkway from the driveway to the porch, and a wood chip ground cover was placed in the flowerbeds. This action has effectively eliminated immediate exposure of the residents to elevated levels of total DDT in surface soils; however, the action was intended to be temporary and the cover is not indefinitely durable; it is expected that the effectiveness of the cover could be compromised if additional action is not taken in the near future.

In April 2001, EPA signed an Action Memorandum in which the resident of 20723 Kenwood Avenue will receive temporary relocation benefits and be temporarily relocated. At the same time, EPA intends to lease the property for use as a community outreach center and daytime staging area during the removal action requested in this Action Memorandum.

2. Current Actions

No cleanup operations have yet been undertaken for the Kenwood storm water drainage pathway other than the temporary cover at the 20723 South Kenwood property. The action documented and requested in this Action Memorandum is consistent with and will supplement any subsequent response action selected by EPA for the Montrose Chemical Superfund Site.

EPA has performed and is performing extensive outreach to the affected community in this case. When performing a time critical removal action, EPA is not required to perform certain community outreach activities. However, EPA has used its discretion in this case to include certain activities in order to afford the community a greater degree of input and understanding of EPA's activities. These community outreach activities include but are not limited to:

a. Public workshops and meetings with presentations on EPA's activities, findings, and approach;

b. Informal gatherings at homes along the street to answer questions and present posters, boards, and other information;

c. Door-to-door visits to explain EPA's sampling approach, sampling results, potential health risks, and related information;

d. Issuance of a fact sheet on EPA's investigation;

e. Issuance of "Field Updates," mini-fact sheets that inform residents of what is happening during the course of the investigation;

f. Customized information packets, presenting sample results, sampling locations, discussion of sampling activities and findings, and discussion of potential health risks and how soil in a resident's yard compares to EPA's risk range;

g. Completed Remedial Investigation addendum with human health risk assessment in accordance with EPA's Risk Assessment Guidance for Superfund (RAGS, including Part D);

h. Briefings for TAG recipient group Del Amo Action Committee and briefings for the TAG advisor;

i. Hiring of an expert independent relocation advisor to listen to and serve community needs;

j. Development of "Responding to You" flyers which contain questions and answers to commonly asked questions in six different categories;

k. Development of a detailed work plan for the removal action, and development of "resident specific work plans" with all work plan information specific to the each individual property;

l. Both a public meeting and door-to-door visits to explain the work plans, obtain resident input on the restoration of their yard, solicit and address community concerns and questions.

Where appropriate and necessary, materials have been translated into Spanish and/or a Spanish translator has been available.

F. ROLES OF STATE AND LOCAL AUTHORITIES

1. State and Local Actions to Date

The California Department of Toxic Substances Control is serving as a support-agency for the Montrose Chemical NPL Site remedial investigation and feasibility study, including the Residential Soils and Produce Investigation which has evaluated the contamination along the Kenwood Avenue former storm water drainage pathway. EPA has also consulted with the Agency for Toxic Substances Disease Registry (ATSDR), the California Department of Health Services and other state and local agencies regarding DDT contamination along Kenwood Avenue.

The ATSDR has performed sampling of home-grown free-range chicken eggs in the 20-block study area and has made these results available to EPA.

Between 1996 and 1999, ATSDR funded a clinic, run by the University of California at Irvine (UCI), for residents of the 30 square block study area. The purpose of the clinic was to screen residents complaining of symptoms for ailments which could be due to environmental exposure to contaminants and to provide counselling to the residents to find appropriate health care. More than 700 people were seen by the clinic while it was in operation.

The clinic was not designed to be an epidemiological study. However, UCI issued a report with generalized statistics and findings (individual results were kept medically confidential and were not released). One of the findings of this report was that, when statistics are adjusted to remove data for persons who had worked at Montrose and who had lived in countries where DDT is still in use, the levels of DDT in blood among clinic visitors was no higher than the U.S.

average. This is one indicator that elevated exposure to DDT may not be presently occurring in the 30-block study area. The clinic was unable to isolate data for persons on Kenwood Avenue from the average, however.

The California Department of Health Services has issued a fact sheet advising residents in the 30-block study area about risks related to consumption of free range chicken eggs. EPA provided input on this fact sheet.

State agencies have not taken response actions related to soils on Kenwood Avenue.

2. Potential for Continued State/Local Responses

Neither the state nor local agencies have funds to implement the recommended removal action. It is anticipated that these agencies will remain in a support role to EPA with EPA as the lead agency for the Superfund response at the site. The Department of Toxic Substances Control has identified Applicable or Relevant and Appropriate Requirements (ARARs) on behalf of the State of California.

III. Threats to Public Health or Welfare or the Environment and Statutory and Regulatory Authorities

A. ACTUAL OR POTENTIAL EXPOSURE TO HAZARDOUS SUBSTANCES BY NEARBY POPULATIONS

EPA has performed a human health risk assessment (HRA) for the Kenwood storm water drainage pathway in accordance the Risk Assessment Guidance for Superfund (RAGS). This HRA is Appendix K of the RI Addendum. The HRA documents the excess future health risks, due to potential exposure to DDT and other Montrose contaminants, to a reasonable maximally exposed individual living on the Kenwood storm water drainage pathway.

The primary exposure pathway by which persons may be exposed to DDT in soils in residential yards in the Kenwood storm water drainage pathway is by ingestion. This may occur when a person brings hand to mouth after contact with soils or dust contaminated with DDT. Ingestion may also occur when a person breathes dust containing DDT, after which the dust is trapped in the mucosa and swallowed. Children are likely to swallow more soil or dust from a yard during play activities than are most adults. EPA's risk assessments account for the potential for childhood chemical exposure.

Soils that are on the surface are covered by grass or other groundcover at most residences at present. Uncovered surface soils, if they contain DDT, can be routes of exposure to DDT. Soils not on the surface (e.g. at depths such as 2 or 4 feet below ground surface) can be routes of exposure in the future if the soils are dug up and brought to the surface.

On a residence-specific basis, EPA evaluated the potential health risks to a reasonable maximally exposed (RME) residential individual living in the Kenwood storm water drainage pathway. Such evaluations are based on a body burden as calculated assuming ingestion of soil daily for a period of 30 years over a lifetime. Child exposure is addressed and incorporated in such calculations.

Because so many sample data were available in this case, EPA used statistics on the mean, rather than solely maximum values, in calculating exposure point concentrations (EPC) in the risk assessment. RAGS supports this approach. The distribution of sample results in each yard was characterized (normal, lognormal, or neither) and exposure point concentrations were based on the 95% upper confidence limit (95% UCL) on the mean. This is the value for the mean at which one can be sure with 95% confidence that the true mean is not higher. The 95% UCL takes into account the number of samples taken in a given yard, and the variability in the data. Yards with fewer samples or more variability will result in higher estimates of the EPC due to uncertainty in the data than will yards with more samples or less variability.

For risk purposes, EPA divided each property in the storm water pathway into one or more risk management areas, called "polygons." Most properties had one risk management polygon, located in the front yard. However, some properties had, for example, one risk management polygon for the front yard and one for a side yard. It was assumed each resident spends all of his time over the 30 year lifetime period in this risk management area. These areas were generally defined to be the area within which concentrations in the front yard were elevated. This area, in turn, defines the residual impact of the former Kenwood ditch. Risks were calculated separately for each risk management polygon.

The following table shows various residential risk values, due to direct exposure to soil, and the corresponding exposure point concentrations, based on toxicity information for DDT available to EPA as of this Action Memorandum.

Risk Level ‡	Corresponding total DDT✳ Exposure Point Concentration (ppm)*†
10^{-6} Cancer Risk	1.7 ppm
10^{-5} Cancer Risk	17 ppm
Noncancer Hazard Index of 1	35 ppm
10^{-4} Cancer Risk	170 ppm
Noncancer Hazard Index of 5	175 ppm

✳ Total DDT is the sum of DDD, DDE, and DDT and related isomers.

* The exposure point concentration is not based on single point sample results but on a 95% upper confidence limit on the mean of the distribution of the data.

† EPA's risk range encompasses the range from 10^{-6} to 10^{-4}, or one in a million to one in ten thousand chance of excess cancer due to DDT over a lifetime. EPA begins to note a concern for non-cancer health effects at a hazard index of 1 (unity).

‡ It is noted that in the HRA, EPA accounted for *all* Montrose-related contaminants. The vast majority of the contaminants found were total DDT. The exposure point concentrations shown on the right above are for comparison purposes only and correspond to the risks shown on the left only in the situation where total DDT is the only compound present.

Three different risks were calculated for each risk management polygon at each property:

1. Risk based on data taken only from the top six inches of soil. This provides an estimate of risk of adverse health effects if there were lifetime exposure to soils as they exist today, *without* ground cover.

2. Risk based on data from the top two feet of soil. This provides an estimate of future risk of adverse health effects if soils within the first two feet of soil were brought to the surface and left unexposed followed by lifetime exposure to those soils, *without* ground cover. This scenario covers tilling the soil, small construction projects, etc.

3. Risk based on data from all the soil samples in the yard (usually as deep as 4 feet, but in some cases 6 or 8 feet). This provides an estimate of future risk of adverse health effects if soils anywhere in the soil column sampled were brought to the surface and left unexposed followed by lifetime exposure to those soils, *without* ground cover. This scenario covers installation of deep foundations, basements, or major excavating construction projects.

The assumptions made in EPA's risk calculations are designed to be health protective and to provide margins of safety to address uncertainties in knowledge about chemical toxicity and

about environmental concentrations at any given location. Also, EPA's risk calculations assume a reasonable maximally exposed (RME) individual (e.g. there is no ground cover, persons spend all of their time in the yard, persons swallow soil every day, persons stay for 30 years, etc.).

The following table provides counts of the number of properties in the Kenwood storm water drainage pathway that exceed various risk levels due to total DDT and other Montrose-related contaminants in soils. 23 properties were sampled.

Lifetime RME Cancer Risk Level	Corresponding Lifetime RME Non-Cancer Hazard Index	No. of properties exceeding risk level in *SURFACE* soil	Number of Yards exceeding risk level at *ANY* of the three soil depth intervals for which risks were calculated
10^{-4}	5	2	3
10^{-5}	0.5	8	12
10^{-6}	0.05	23	23
2×10^{-5}	1	6	10

There are 7 properties with one or more measured sample points at any depth exceeding 170 ppm; 3 properties exceeding 1000 ppm.

Because DDT has proven to be highly persistent in the environment, future residents of Kenwood Avenue may encounter similar DDT concentrations to those seen today if no action is taken.

Based on the above estimates and information, EPA believes that response actions are necessary to prevent actual or potential residential exposure to the DDT in soils in the Kenwood storm water drainage pathway, both presently and in the future. (See Attachment 1, Memorandum to Montrose File from Serda, Regional Toxicologist).

IV. Endangerment Determination

Actual or threatened releases of hazardous substances found in soils at residential properties along the Kenwood storm water drainage pathway, if not addressed by implementing the removal action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. Proposed Actions and Estimated Costs

Under this Action Memorandum, the following removal action will be performed. It is noted that the properties subject to the removal action are defined in section A2 and A4 below and are shown on Figure 3. The area within these yards that is subject to the excavation is generally within the front yards of these properties and is defined by sampling results and the location of the former ditch. This area will be defined specifically in EPA's Work Plan for the removal action.

A. PROPOSED ACTIONS

1. Removal Action Synopsis

Under this removal action, soils at unacceptable levels contaminated with DDT due to storm water runoff from the operations of the former Montrose Chemical DDT plant at 20201 South Normandie Avenue will be removed from residential yards in the Kenwood storm water drainage pathway. A list of the yards subject to the removal action, and the criteria determining the soils to be removed, are shown in subsequent subsections. The soils will be excavated from their current location and replaced with clean soil and compacted. In this process, certain features of each yard will be demolished or moved. When the excavation and backfill of soil is completed, each yard will be restored. Items will be replaced with features in-kind. Restorations will meet current local building codes. It is anticipated that this removal action can be completed safely and effectively without relocation of residents. Temporary relocation will be offered to residents, however, based on request and need. Waste soil excavated will be transported by covered truck to the former Montrose plant property, and temporarily stored there in sealed containment cells in accordance with the legal requirements for the storage and management of hazardous waste. As a contingency, the soil may be transported to a permitted hazardous waste facility in compliance with EPA's CERCLA Off-site Policy, and incinerated.

2. Tier 1 Properties: Standards for Taking Action

EPA has defined two tiers of properties to which this removal action shall apply. Tier 1 properties are those within the Kenwood storm water drainage pathway in which EPA's human health risk assessment has estimated risks that exceed the standards below. EPA has identified and calculated potential excess long term health risks due to Montrose contaminants in soil at Tier 1 properties that are sufficient to warrant the removal action. The term "Montrose contaminants" as used here includes total DDT, all isomers of BHC, and chlorobenzene (this definition of this term is limited solely to this document).

Tier 1 Properties Standards for Taking Action
(Removal Based on Risk Calculation)

A property shall be subject to this removal action and the Tier 1 cleanup standards if any one of the following standards is met for any risk management polygon in EPA's HRA for that property:

1. The excess cancer risk due to Montrose contaminants in ***surface soil*** exceeds one in one hundred thousand ($1x10^{-5}$); or

2. The excess cancer risk due to Montrose contaminants within the ***first two feet of soil*** exceeds one in one hundred thousand ($1x10^{-5}$); or

3. The noncancer hazard index due to Montrose contaminants ***over the maximum depth sampled*** (i.e., from all samples from all depths) in the yard exceeds a value of 1; or

4. Any single soil sampling result exceeds a noncancer hazard index of 10.

For yards where total DDT is the only contaminant or the overwhelmingly predominant contaminant (true for most yards), these standards will have these direct corollaries:

1. The exposure point concentration (EPC) of total DDT for ***surface soil*** exceeds 17 ppm; or

2. The EPC of total DDT within the ***first two feet of soil*** exceeds 17 ppm; or

3. The EPC of total DDT ***over the maximum depth sampled*** exceeds 35 ppm; or

4. Any single soil sampling result exceeds 350 ppm total DDT.

Exposure point concentrations (EPCs) are calculated in EPA's HLA and represent the environmental concentration of total DDT assumed to be present in determining the risk (See Section III above). The EPC is based on a health conservative estimate using the results of all the samples over the depth interval discussed.

As described earlier, most yards have only one risk management polygon in EPA's Risk Assessment. However, some yards have two polygons (for example, front and side yard). The above standards shall be applied to each risk management polygon within a yard independently. As discussed above, risk management polygons were determined by first defining the area in the

yard over which the influence of the former Kenwood Ditch contamination is present. EPA sampled in a grid pattern covering the former drainage easement for the Kenwood Ditch; the grid was extended westward until concentrations of DDT fell below 10 ppm. The resulting grid determined the size and shape of the risk management polygon for that yard.

The following properties have one or more polygons meeting the above criteria and represent Tier 1 properties. Some properties have more than one address as multiple dwelling units may be present on these double-deep lots.

Tier 1 Properties Subject to Removal Action

- 1202 W. 204th Street
- 20421/20423 South Kenwood Avenue
- 20433/20435/20437 South Kenwood Avenue
- 20519/20523 South Kenwood Avenue
- 20529/20531 South Kenwood Avenue
- 20535 South Kenwood
- 20603 South Kenwood
- 20615 South Kenwood
- 20703 South Kenwood
- 20709 South Kenwood
- 20713 South Kenwood
- 20723 South Kenwood

3. Tier 1 Properties: Standards for Cleanup

Excavation shall occur at Tier 1 properties to remove total DDT-contaminated soil. Initially, excavation shall encompass the contiguous area or areas within the risk management polygon(s) which has (have) concentrations of total DDT exceeding 10 ppm. Where the contamination shows no trends, all soils within the area of the front yard that was sampled shall be excavated. In all cases, the excavation shall *at a minimum* encompass the area in which the historical flood control easement for the Kenwood Ditch intersected the property, to a depth of 2 feet below ground surface.

While the excavation is open, samples will be collected from the sides and bottom of the excavation. These samples will be used to confirm that the excavation is complete. If concentrations above 10 ppm are still present, the size of the excavation will be extended until levels below 10 ppm are found. Field screening techniques may be used, however, the final set of samples will be confirmed by laboratory sampling.

The portion of driveways within the excavation area will be removed and excavation will progress under the driveway to the same depth as that attained next to the driveway. Confirmation sampling will ensue as in the remainder of the excavation area.

In virtually all cases, DDT levels fall off as one moves toward the houses on Kenwood Avenue. It is not presently anticipated that elevated levels of DDT will be found under houses. This cleanup standard does not apply to soil under houses and excavation under houses is not covered by this Action Memorandum.

Excavation shall be limited to a depth of 6 feet under this Action Memorandum. It is extremely unlikely that residents or others would excavate and bring soils to the surface from below this depth.

Sidewalk and median areas associated with Tier 1 properties shall be addressed independently, in accordance with subsection 5 below.

4. Tier 2 Properties: Standards for Action and Cleanup

Tier 2 properties are those within the Kenwood storm water drainage pathway in which EPA's human health risk assessment has not estimated risks that exceed the standards for taking action under Tier 1. These are the balance of homes in the pathway not included in Tier 1. EPA recognizes that the former drainage pathway passed through all the yards in the Kenwood storm water drainage pathway, and that substantial quantities of waste water and storm water containing hazardous substances were released from the Montrose Chemical plant property into this pathway. Based on these facts and circumstances, EPA believes that it is appropriate to ensure that the original drainage pathway is removed. While EPA's sampling has been extensive, it is still possible that some DDT has been missed in EPA's sampling. Under this removal action, EPA will offer homeowners of Tier 2 properties the option of extending the removal action to their property. The original storm water drainage pathway lay within the former flood control easement for the Kenwood Ditch, the boundaries of which are known to EPA based on engineering drawings for the Kenwood Drain. The response action at Tier 2 properties affords an added margin of protectiveness to the response action at Tier 1 properties by ensuring that soils within the Kenwood storm water drainage pathway are removed to a reasonable minimum depth. Properties subject to Tier 2 removal standards are shown in the table below.

Excavation shall occur at Tier 2 properties to remove total DDT-contaminated soil. Initially, excavation shall encompass the area in which the historical flood control easement for the Kenwood Ditch intersected the property, to a depth of 2 feet below ground surface. The excavation may be deepened at discrete locations to remove individual points of elevated concentration ("hot spots") as indicated by previous sampling. A contiguous area for excavation

at points greater than 2 feet will not be identified as with Tier 1 properties. Attempts will be made to adjust the depth of the excavation to be less than the depth of buried utilities such as water, gas, and sewers, where these exist.

While the excavation is open, samples will be collected from the sides and bottom of the excavation. These samples will be used to confirm that the excavation is complete. If concentrations above 10 ppm are present, the size of the excavation will be extended until levels below 10 ppm are found. Field screening techniques may be used, however, the final set of samples will be confirmed by laboratory sampling.

The portion of driveways within the excavation area will be removed and excavation will progress under the driveway to the same depth as that attained next to the driveway. Confirmation sampling will ensue as in the remainder of the excavation area.

It is not presently anticipated that elevated levels of DDT will be found under houses. This cleanup standard does not apply to soil under houses and excavation under houses is not covered by this Action Memorandum.

Excavation shall be limited to a depth of 6 feet under this Action Memorandum. It is extremely unlikely that residents or others would excavate and bring soils to the surface from below this depth.

Sidewalk and median areas associated with Tier 2 properties shall be addressed independently, in accordance with subsection 5 below.

Tier 2 Properties Potentially Subject to Removal Action

- 1187 W. 204th Street
- 1203 W. 204th Street
- 1206 W. 204th Street
- 20411/20413 South Kenwood Avenue
- 20417/20419 South Kenwood Avenue
- 20429 South Kenwood Avenue
- 20501/20503 South Kenwood Avenue
- 20507/20509 South Kenwood Avenue
- 20513 South Kenwood Avenue
- 20609 South Kenwood Avenue
- 20619 South Kenwood Avenue*
- 20627 South Kenwood Avenue*
- 1209 South Kenwood Avenue

*These properties were not sampled in EPA's investigation as the property owners did not provide property access.

5. Median and County Areas: Standards for Action and Cleanup

The sidewalk and grass median (area between sidewalk and street) on the west side of Kenwood Avenue are owned by the County of Los Angeles. The medians were sampled along the west side of Kenwood in front of 15 yards. Medians in front of the other 10 yards in the Kenwood storm water drainage pathway either did not exist or were covered with concrete and were not sampled. Samples from the median in EPA's investigation were not included in the risk calculations for residents' yards. Risks attributed to such samples were addressed on a screening basis in EPA's HRA. The same applies to the asphalt alleyways intersecting Kenwood Avenue between 1202 W. 204th and 20411/20413 South Kenwood Avenue, and between 20713 South Kenwood Avenue and 20723 South Kenwood Avenue. DDT contamination is present in median areas at widely varying levels. Samples indicate that total DDT is generally present at levels exceeding 10 ppm.

Median and County areas within the Kenwood storm water drainage pathway shall be addressed independently of the Tier 1 and Tier 2 properties and the corresponding standards for action and cleanup for those properties.

Excavation shall occur in the median and under the sidewalk to a minimum of two feet in depth. The excavation may be deepened to excise "hot spots" as identified by EPA's previous sampling.

There is a water main under the sidewalk most of the way down the west side of Kenwood Avenue, and the Kenwood Drain itself lies near the street and median. These two structures will *not* be removed/excavated under this removal action. Excavation will occur above and to the side of these two structures where they occur. While the excavation is open, samples will be collected from the sides and bottom of the excavation. These samples will be used to confirm that the excavation is complete. If concentrations above 10 ppm are present, the size of the excavation will be extended until levels below 10 ppm are found. Field screening techniques may be used, however, the final set of samples will be confirmed by laboratory sampling.

Excavation shall be limited to a depth of 6 feet under this Action Memorandum. It is extremely unlikely that residents or others would excavate and bring soils to the surface from below this depth.

6. Standards for Imported Soil

Soil backfill to be brought into yards shall be tested at a minimum for pesticides, volatile organics (VOCs), semivolatile organics (SVOCs), metals, polyaromatic hydrocarbons (PAHs), and BTEX (petroleum) compounds. EPA shall obtain imported soil from an area which, based on knowledge of its history, is not located in a known industrial or agricultural area. EPA shall verify previous sampling and take additional confirmation sampling for industrial and agricultural contaminants and metals (metals can be naturally-occurring). Imported soil shall meet EPA Residential Soil Preliminary Remediation Goals (PRGs) with respect to all contaminants tested, except for arsenic, which shall meet a standard of 4 parts per million (ppm). This is a conservative value for the average of naturally-occurring arsenic in California soils.

7. Rationale for Selection of Action and Cleanup Standards

The cleanup standards and standards for action discussed above are protective with respect to human health. At the conclusion of this response action, the elevated and unacceptable potential health risks from soils with DDT will be eliminated.

a. Risk Assessment Calculations and Assumptions

EPA's risk assessment is based on chronic lifetime exposure to DDT. It is also based on standard residential reasonable maximum exposure assumptions (RME). Among these are the assumptions that residents swallow 100 mg (200 mg for children) of soil every day for 30 years in a lifetime, that all ingested DDT is absorbed by the body, that soils are exposed and available

for exposure, and other similarly health-protective assumptions. For non-cancer effects, a safety factor of 100 is applied to the No-Observed-Adverse-Effect-Level based on toxicological studies. The Risk assessment is based on the most sensitive end points. Exposure Point Concentrations are based on the 95% upper confidence limit on the mean. This approach is supported by EPA guidance, is conservative with respect to risk estimation, and is appropriate given the fact that there are a number of data for each yard. The risk values when computed this way are designed to err on the side of health protectiveness.

Residential soils are present, by definition, where people live and make their home. A high degree of protectiveness is called for under these circumstances. The assumptions and calculations used in the risk assessment are of this caliber and ensure that the extra appropriate degree of protectiveness is built into the risk estimates themselves.

b. Rationale for Tier 1 Standards for Taking Action

Tier 1 properties require action based on potential health risk estimates. As discussed earlier, there is a background level of DDT in soils from historical use of DDT in the south L.A. area averaging 1-3 ppm, with the 95th percentile at about 6-8 ppm. Within the 30-square block area near Montrose, outside of Kenwood, DDT in soils similarly averages 1-3 ppm, with the 95th percentile in the data at about 8-10 ppm. When defining a risk-based standard for action along the Kenwood storm water drainage pathway, it is important to use a protective standard within EPA's risk range that can be distinguished from background DDT and is attributable to the Montrose Chemical site. Using 10^{-5} as a risk level for taking action under Tier 1 is appropriate for this purpose. This risk level is within EPA's risk range but above the level of background DDT.

This Action Memorandum defines four risk standards for Tier 1, any of which can trigger action. These are designed to ensure that a cleanup is triggered when risk is sufficiently high under any of three possible scenarios of chronic exposure to soils:

- Direct exposure to soils at the surface today (and in the future if no disturbance of soil occurs);
- Exposure to soils brought to the surface and mixed from a depth of up to 2 feet – this addresses the potential for minor construction activities such as tilling, piping, footings, or altering yard elevation; and
- Exposure to soils brought to the surface and mixed from a depth of up to 4-6 feet – this addresses the potential for more major construction activities such as construction of buildings or swimming pools.

The standard for a single point ensures that action is triggered in the unlikely situation that the contamination is extremely limited in space yet high enough to pose an acute health risk from casual contact. DDT is not generally expected to pose an acute risk until persons are exposed to soil concentrations of at least 1000 ppm. A conservative chronic surrogate for acute health effects is a hazard index of 10; in this case, 350 ppm total DDT. This level is also the World Health Organization reference value for DDT in countries outside the United States.

By using the refined and multiple standards for action, and ensuring that action standards are well within EPA's risk range, Tier 1 action will be protective with respect to DDT in residential soil.

c. Rationale for Tier 2 Standards for Taking Action

Tier 2 properties do not require action based on the Tier 1 criteria. However, because these residential properties lie within the pathway, and it is known that Montrose contaminants traversed the pathway along its length at some point in the past, soils within the known historical drainage pathway easement will be removed as an added measure of protectiveness. This will ensure that contaminant remnants of the drainage within a readily available depth of 2 feet below the surface that may not have been detected by the sampling are removed. In addition, confirmation sampling will be performed for Tier 2 properties and the excavation can be extended if indicated necessary by the sampling. The Tier 2 standards will, in most cases, result in less soil removed from a property than will the Tier 1 standards because sampling indicates these properties are less contaminated. Nonetheless, the Tier 2 action will enhance the protectiveness of the removal and help to ensure that this removal action is the only response action required along Kenwood Avenue.

d. Rationale for 10 ppm As The Cleanup Level

Using 10 ppm as the cleanup level will ensure that all soil remaining in yards that are subject to this removal action is similar to the background range for DDT. Any potential chronic residual soil risks from DDT remaining after the removal action (based on averaging over the yard) will be less than or similar to that posed by background. Background risks from DDT in the south L.A. area are low and at the low end of EPA's risk range.

EPA's risk guidance typically estimates lifetime risks using an *average* of soils in the yard. A uniform soil concentration of 10 ppm total DDT in residential soils would represent a risk of $6x10^{-6}$, which is at the low end of EPA's risk range. However, in cleaning all individual points in each yard at or above 10 ppm, the vast majority of soil points in each yard will be significantly lower than 10 ppm. Because risks are based on average concentrations, the remaining residential RME risk after the cleanup will not exceed $6x10^{-6}$ but will likely be close to $1x10^{-6}$.

Thus, after the removal action, properties in the Kenwood storm water drainage pathway can be considered usable for residential purposes without restriction.

8. Basis for Not Selecting Permanent Relocation as a Response Action

This Action Memorandum requests a response action to be performed under Removal Authority. The preamble to the National Contingency Plan (50 *Federal Register* 37625, September 16, 1985) states "[t]here are certain situations where EPA's removal authority does not extend, e.g., permanent relocation cannot be performed as part of a removal response." A permanent relocation of residents is not permitted under the authority being used in this case.

However, authority or lack of authority to perform a permanent relocation is not the reason that EPA has selected the use of removal authority in this case. In fact, EPA would not have selected permanent relocation as a response action even if remedial authority were being used. *EPA Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions* [OSWER Directive 9355.0-71P, EPA 540F-98-033, PB98-963305] provides EPA's policy on the situations in which permanent relocation may be considered when using remedial authority. This policy states,

> ...EPA's preference is to address the risks posed by the contamination by using well-designed methods of cleanup which allow people to remain safely in their homes and businesses. This is consistent with the mandates of CERCLA identified above, and the implementing requirements of the NCP which emphasize selecting remedies that protect human health and the environment, maintain protection over time, and minimize untreated waste.
>
> Because of CERCLA's preference for cleanup, it will generally not be necessary to routinely consider permanent relocation as a potential remedy component...

The policy states the situations in which permanent relocation may be considered. The Kenwood storm water drainage pathway does not fit the situations discussed in the policy. Because of this, even if this were a remedial action, the present situation would lie outside EPA's policy for use of permanent relocations. EPA can safely and effectively complete this removal action without performing a permanent relocation.

1. Policy: *Permanent relocation may be considered in situations where EPA has determined that structures must be destroyed because they physically block or otherwise interfere with a cleanup and methods for lifting of moving structures safely, or conducting cleanup around the structures, are not implementable from an engineering perspective.*

The yard features and structures that must be moved to complete this removal action can be safely moved and they will not interfere with the cleanup. Based on existing data, EPA does

not plan to excavate under houses. The removal of soils is implementable from an engineering perspective.

2. Policy: *Permanent relocation may be considered in situations where EPA has determined that structures cannot be decontaminated to levels that are protective of human health for their intended use, thus the decontamination alternative may not be implementable.*

Decontamination of major structures (e.g. buildings) is not required for the contemplated removal action. Most minor structures (e.g fences, retaining walls) that are above ground can be moved and reused. Minor structures below ground (e.g. footings, root balls) can be removed and disposed, and then replaced with in-kind materials and features. Hence, the contamination can be removed effectively from the properties.

3. Policy: *Permanent relocation may be considered when EPA determines that potential treatment or other response actions would require the imposition of unreasonable use restrictions to maintain protectiveness (e.g. such as children playing in their yards, would have to be prohibited or severely limited)*

It is anticipated that, through the removal action requested in this Action Memorandum, EPA will be able to restore the properties within the Kenwood storm water drainage pathway to full residential use. Because the contamination will have been removed as a result of this removal action, no use restrictions will be necessary to maintain protectiveness and typical activities will be not be curtailed.

4. Policy: *Permanent relocation may be considered when an alternative under evaluation includes a temporary relocation expected to last longer than one year.*

It is anticipated that EPA will be able to complete this action without the need for any temporary relocations. However, should temporary relocation be requested or determined necessary, its duration for a resident of a given property would not exceed the length of the removal work at that property. About 2-3 weeks is expected to be required to excavate and install backfill, and another 3-4 weeks may be required to restore each property. Temporary relocations exceeding a year will not be necessary.

The primary reasons for using removal authority in this case are (1) to acquire the ability to act more quickly to address the contamination in this residential area, and (2) because the nature of this contamination problem is well-suited to removal authority. There are no practicable options for reducing the potential for exposure to the contaminated soil itself other than to remove it. In-situ and ex-situ on-site cleanup options are not practicable in this residential yard situation. Therefore, the action required does not lend itself to the development of technically varied alternatives which are then studied at length in a feasibility study. Rather, a classic removal of the contaminated medium is indicated.

9. Excavation and Backfill

Soil excavation shall be performed to meet the aforementioned cleanup standards. Soil excavation shall be performed in accordance with EPA's Response Action Work Plan. Prior to excavation, each home shall be adequately protected to ensure that it is not damaged and that dust does not enter it. House foundations shall be protected. Dust suppression shall be utilized at all times during excavation and while excavations are open, and dust monitoring shall be performed during excavation activity. Where necessary, erosion control and run-on/run-off control shall be provided during excavation activity. Temporary yard coverings and fencing shall be provided where necessary to prevent wind erosion and ensure safety of residents, bystanders, and workers, until the new sod is applied.

Where possible, utility lines (water, gas, sewer, sprinkler systems) that are not affected by the excavation shall be left in place. For utilities that are within the area of excavation or will be affected by it, EPA will either 1) remove the utility line and re-install it, or 2) excavate around the existing line. EPA may excavate and backfill in stages in order to accommodate utility relocations.

Where necessary to provide a resident access to their property while the yard is undergoing excavation, particularly during after-hours, temporary bridges or other pathways will be erected.

Where excavation must occur next to a house, retaining wall, or near the property line; terracing, shoring, or other engineering techniques shall be used to ensure that the foundation and/or existing structures adjoining the property is/are not compromised. Should the excavation be extended to within three feet of a building or property line, the top soil to about six inches in depth will be removed in this area. However, if terracing is necessary to protect the foundation and/or existing structures adjoining the property, some soil within three feet of the building or property line may be left in place.

Excavated material shall be placed in trucks and securely covered prior to transport. Sufficient separation between the trucks and residents, bystanders, and vehicles will be maintained to ensure safety.

Backfill will be compacted in lifts to residential standards so as to be appropriate for residential activities. Topsoil will be provided for grass and plants in the root zone.

10. Restoration

After the excavation and backfill, yards will be restored to a condition equivalent to that existing before the removal action. Features or items in each yard which are or must be permanently removed, become damaged or destroyed, and/or are discarded as a result of the removal activity shall be removed and reinstalled if practicable or replaced in-kind if reinstallation is not possible. A plan shall be developed with each homeowner identifying which features and items in the yard will be restored and how they will be restored. The homeowner will sign this plan indicating that they agree to the work to be done in their yard.

Items to be restored under this Action Memorandum may include, but are not limited to: fencing, decorative walls, retaining walls, driveways, walkways, sod, tress, bushes, shrubs, plants, sprinkler systems, planter boxes, etc. Restorations shall be performed in accordance with current local building codes and requirements in effect at the time of the removal action.

11. Temporary Relocation

This Action Memorandum provides for temporary relocation benefits to persons living within the Kenwood storm water drainage pathway, in accordance with EPA policies. It is anticipated that all Tier 1 and Tier 2 properties can be excavated and backfilled without requiring temporary relocation. However, some residents affected by the action may wish to be temporarily relocated due to vibrations, noise or other disruptions and some residents may have special needs or situations (such as sleeping during the daytime, dust allergies, etc.) which will necessitate temporary relocation.

For families receiving temporary relocation, housing shall be provided. The Government shall rent space for the residents, provided they have signed and honor their relocation agreements. Temporary relocation for pets, if required, may be provided under this Action Memorandum. Temporary relocation may be provided for families living immediately adjacent to a property receiving active removal work, if appropriate. During temporary relocation, security services will be provided for the property of affected persons. A security guard will be posted outside the home during all evening, night, and morning hours and any other times that cleanup work is not ongoing at the property.

No permanent relocation shall be provided under this Action Memorandum.

12. Waste Soil Temporary Stockpile

Assuming that EPA reaches a requisite property access agreement with Montrose Chemical Corporation and Atkemix Thirty-Seven (the current owner of the property), waste soils excavated during this removal action will be transported by covered truck approximately 2-4 blocks to the former Montrose Chemical plant property at 20201 S. Normandie Avenue. The plant property is presently covered with asphalt, underlain by soils contaminated with up to tens of thousands of ppm total DDT. EPA is currently evaluating cleanup alternatives for the soils at the former Montrose plant site by way of a Feasibility Study. Soils from this removal action will be temporarily stockpiled until such time as a response action is selected for the plant property soils. The response action selection document for those soils, presumably a record of decision (ROD) will consider the ultimate treatment/disposal of the removal soils along with the plant soils. Presumably, the same response action will apply to both. For example, if a cap is applied to the plant property, then the removal soils can be spread out and the cap placed on top. If on-site treatment is applied, the same treatment can be applied to the removal soils.

The stockpiled soil shall be placed in one or more lined and bermed cells. While cells are being filled, there shall be dust and erosion control At each cell, a liner shall be placed on the asphalt and over the sides of the berm. An inner liner shall be wrapped around the soil material, folded over the top, and sealed. A final liner shall cover the top of the cell and be ballasted down outside the bermed area. The cells will be designed to last, with proper maintenance, for at least 5 years from the time they are sealed. A system shall be in place to be able to detect/inspect for liquids inside the liner. This stockpile shall meet the Applicable or Relevant and Appropriate Requirements (ARARs) identified in the ARARs section of this Action Memorandum, below. The stockpile shall be properly maintained during its life in accordance with maintenance and design specifications. This shall include regular periodic inspections for tears in the liners.

13. Waste Soil Contingency

In the event that the requisite agreements with Montrose Chemical Corporation to allow for the temporary stockpile on the former Montrose plant property cannot be reached in time for the action to proceed, or in the event that regulatory requirements cannot be met, then the following contingency action shall be considered part of this removal action.

Waste soil shall be transported, in accordance with all applicable statutes and regulations, to a hazardous waste incineration facility which is in compliance with the CERCLA Off-Site Policy, 42 U.S.C. Section 9621(d)(3). The soil will be incinerated so as to meet the RCRA HSWA Amendments ("Land Ban") requirements, 40 C.F.R. Part 268, for DDT prior to landfilling the ash.

C. WAIVER OF STATUTORY EXPENDITURE AND TIME LIMITS

As summarized above, the expected costs of this removal action exceed the $2 million dollar limitation for such actions contained in section 104(c)(1) of CERCLA, 42 U.S.C. Section 9604(c)(1). However, the removal action as set out in this action memorandum is consistent with selected remedial actions at the Montrose site and is non inconsistent with remedial actions that may be selected in the future. Consequently, the consistency exemption to the $2 million dollar limit on removal action, as established by and contained in section 104(c)(1) of CERCLA, applies in this case and allows the selection of removal actions that are expected to cost in excess of $2 million. 42 U.S.C. Section 9604(c)(1)(c). The excavation of contaminated soil and storage of that soil at the montrose plant property will not interfere with the implementation of the remedial actions selected by EPA to address groundwater contamination. The locations at the Montrose plant property where the soil will be stored will be selected to avoid interference with existing monitoring wells and potential locations of the above-ground groundwater treatment plant. Additionally, the excavation of contaminated soil and storage at the Montrose plant property will not in any way limit or interfere will the implementation of remedial actions that may be selected in the future by EPA with respect to other operable units of the Montrose site. This removal action provides for the storage of the excavated soils at the Montrose plant property until a remedy is selected for the contaminated soils at the Montrose plant property. Such storage and subsequent remedial management of such soils is consistent with all of the remedial alternatives currently being considered by EPA: no action, a RCRA equivalent cap, on-property treatment and off-property treatment of contaminated soils. The removal actions set out in this action memorandum are necessary to address current unacceptable risks to human health resulting from the presence of elevated levels of DDT in currently occupied residential properties.

D. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The following legal requirements are determined by this Action Memorandum to be applicable or relevant requirements (ARARs) for the selected removal actions described herein. See 42 U.S.C Section 9621(d)(2) and 40 C.F.R. Section 300.415(j)(attainment of ARARs in removal actions). Only substantive portions of the requirements in the cited provisions below are designated as ARARs for this action. EPA has conferred with the California Department of Toxic Substances Control regarding the identification of ARARs for this action and DTSC has concurred with EPA's decision to identify the ARARs listed below.

By this Action Memorandum for purposes of identifying ARARs, EPA is making the determination that the excavated soil must be managed as state and federal hazardous waste. This determination is based on site specific information contained in the Administrative Record, especially information regarding the sources and concentrations of hazardous substances released at and from the Montrose Plant Property and found along the storm water pathway that is contained in the Montrose Site Remedial Investigation and Remedial Investigation Addendum.

Excavated soil containing 1 ppm of DDT or more qualifies as a hazardous waste under California law. 22 CCR Section 66261.24. In addition, excavated soil from the storm water pathway containing DDT or isomers of BHC qualifies as a federal RCRA listed hazardous waste (RCRA Hazardous Waste Numbers U61 and U129 respectively).

1. Applicable or Relevant and Appropriate Requirements

   a. South Coast Air Quality Management District Requirements Applicable to the Excavation and Handling of Contaminated Soil

      SCAQMD Rule 401 - visible emissions
      SCAQMD Rule 402 - nuisance dust
      SCAQMD Rule 403 - fugitive dust

   b. Hazardous Waste Management - Pre-Transport Requirements ("CCR" - California Code of Regulations)

      22 CCR Part 261 - identification of hazardous waste
      22 CCR 66262.11 - hazardous waste determination by generator

   c. Hazardous Waste Management - Transportation Requirements

      22 CCR 66262.30 HW transporter - packaging
      22 CCR 66262.31 hW transporter - labeling
      22 CCR 66262.32 hW transporter - marking
      22 CCR 66262.33 hW transporter - placarding
      22 CCR 66263.16 hW transporter - container requirements
      22 CCR 66263.23 (a)(c)(d) hW transporter - operation requirements
      22 CCR 66263.30 hW transporter - requirements re: release during transportation
      22 CCR 66263.31 hW transporter - requirements re: release during transportation

   d. Hazardous Waste Management - Requirements for Storage of Contaminated Soil at the Montrose Plant Property

      22 CCR 66264.250 (c) waste pile applicability and operational standards (substantive standards only).
      22 CCR 66264.251 (a)(e)(i)(l) - waste pile design and operating requirements
      22 CCR 66264.254 waste pile inspection requirements

22 CCR 66264.256 waste piles - prohibition against storage of incompatible wastes. *This section and section 257 below pertain to situations that are not expected to occur during the implementation of this removal action, however, they are named as applicable requirements to ensure that such situations do not occur.*

22 CCR 66264.257 waste piles - prohibition against storage of reactive wastes

e. Hazardous Waste Storage Facility Requirements Triggered by Storage of Contaminated Soil at the Montrose Plant Property

22 CCR 66264.14 Security Requirements

22 CCR 66264.15 (a), (b)(1-4), (c), and (d) General Inspection Requirements

22 CCR 66264.19 (a-c) Construction QA, (d) substantive requirements only, with EPA providing the approval that the CQA plan was successfully implemented and the design requirements were met.

22 CCR 66264.25(a) Design Standards - storms

22 CCR 66264.31 Preparedness and Prevention

22 CCR 66264.37 Arrangements with Local Authorities - *note that this requirement applies both to the filling of the soil storage cells as well as the ongoing maintenance of the cells.*

22 CCR 66264.51 Contingency Plans

22 CCR 66264.52 Content of Contingency Plan

22 CCR 66264.53(2) Copies of Contingency Plan

22 CCR 66264.54 Amendment of Contingency Plan

22 CCR 66264.55 Emergency Coordinator

22 CCR 66264.56 Emergency Procedures

2. Other Legal Requirements of Independent Applicability

The removal actions selected in this Action Memorandum may trigger additional legal requirements. These requirements are not identified as ARARs because such requirements do not meet the definitional prerequisites for ARARS as set out in CERCLA section 121, 42 U.S.C. 9621(d)(2), or because such requirements are triggered by offsite activities. However, the requirements set out below may apply to portions of the selected removal action as a result of the independent application of legal authorities other than Section 121(d)(2) of CERCLA.

a. CERCLA Section 121(d)(3), 42 U.S.C. Section 9621(d)(3) and 40 C.F.R. Section 440 requirements regarding offsite disposal of material contaminated with hazardous substances.

b. Provisions of Title 22 of the California Code of Regulations and parallel provisions of federal RCRA regulations related to offsite shipments of hazardous waste, including but not limited to treatment and disposal requirements and limitations.[6] See generally, 40 C.F.R. Part 268.

c. Provisions of the California Porter Cologne Act prohibiting and regulating the release of pollutants into waters of the State.

d. Federal and State Occupational Health and Safety Requirements.

e. CERCLA Section 103, 42 U.S.C. Section 9603, notification requirements and comparable provisions of California law.

E. SUMMARY

This removal action will address elevated levels of total DDT and significant long-term (chronic lifetime) potential health risks associated with total DDT in residential yards along the Kenwood storm water drainage pathway. Wastes from the former Montrose DDT manufacturing plant mixed with rain water formerly ran down a ditch in this pathway which was later replaced with a buried drain. Soils at residential homes within the Kenwood storm water drainage pathway will be excavated and replaced with clean soil material, which will be appropriately compacted. Features in the yards will be restored with an "in-kind" replacement. Residents affected by the action requesting and requiring relocation during the action will be provided temporary relocation benefits.

Soils will be removed to a level of 10 ppm total DDT, which is close to the range of background concentrations of DDT in this area. At the conclusion of the removal action, residual risks from soils in the Kenwood storm water drainage pathway will be near the low end of EPA's risk range; properties receiving the cleanup will be usable for residential purposes without

[6] Movement of contaminated soil from Kenwood Avenue to the Montrose Plant Property does not trigger these requirements as such movement within an area of contamination (i.e. the storm water pathway beginning at and including the Plant Property to and including the contamination along the west side of Kenwood Avenue) does not constitute "placement" under federal or state hazardous waste law requiring treatment of the soil at this time. See US EPA, OSWER, Compliance with Other Laws Manual: Interim Final, Vol I at 2-15 to2-18 (EPA 540 G-89 006) (August 1988). Subsequent remedial management of such soils at the Montrose Plant Property may be accomplished through the designation of a RCRA corrective action management unit but it is not necessary to make such a determination at this time.

restriction, and the unacceptable residential health risk from DDT in this neighborhood will have been addressed.

VI. Outstanding Policy Issues

No outstanding policy issues have been identified at this time.

VII. Enforcement

See Attachment 2, confidential memorandum from John Lyons, EPA Assistant Regional Counsel.

VIII. Recommendation

As documented in this Action Memorandum, conditions within the Kenwood storm water drainage pathway meet the National Contingency Plan criteria for a removal action (40 C.F.R. Section 300.415(b)(2)), and the CERCLA Section 104(c) consistency exemption from the $2 million limitation. Approval of the proposed removal action is recommended.

The total project cost ceiling is estimated to be $3,047,000 if the waste disposal contingency is not activated, and $10,114,000 if the contingency is activated. The funds for this removal action will be drawn initially from the Montrose Chemical Superfund Site Special Account. If these funds are insufficient, the difference will be drawn from the Superfund Removal budget. It is expected that the removal action can be completed within six months of signing this Action Memorandum.

John Zem for Keith Takata — 6/7/01

Approval Signature — Date

Disapproval Signature — Date

Figures

Figure 1a:
Montrose Plant Site and Historical Storm Water Drainage

Figure 1b:
Former Kenwood Ditch, Former Kenwood Ditch Easement, and Kenwood Drain

Figure 2:
Vicinity Map for Response Action

Figure 3:
Properties Involved in This Removal Action and Transected by The Kenwood Storm Water Drainage Pathway

Attachments

1. Memorandum to Montrose File from Dr, Sophia Serda, Regional Toxicologist
2. Memorandum from John Lyons, Assistant Regional Counsel

FIGURE 1a

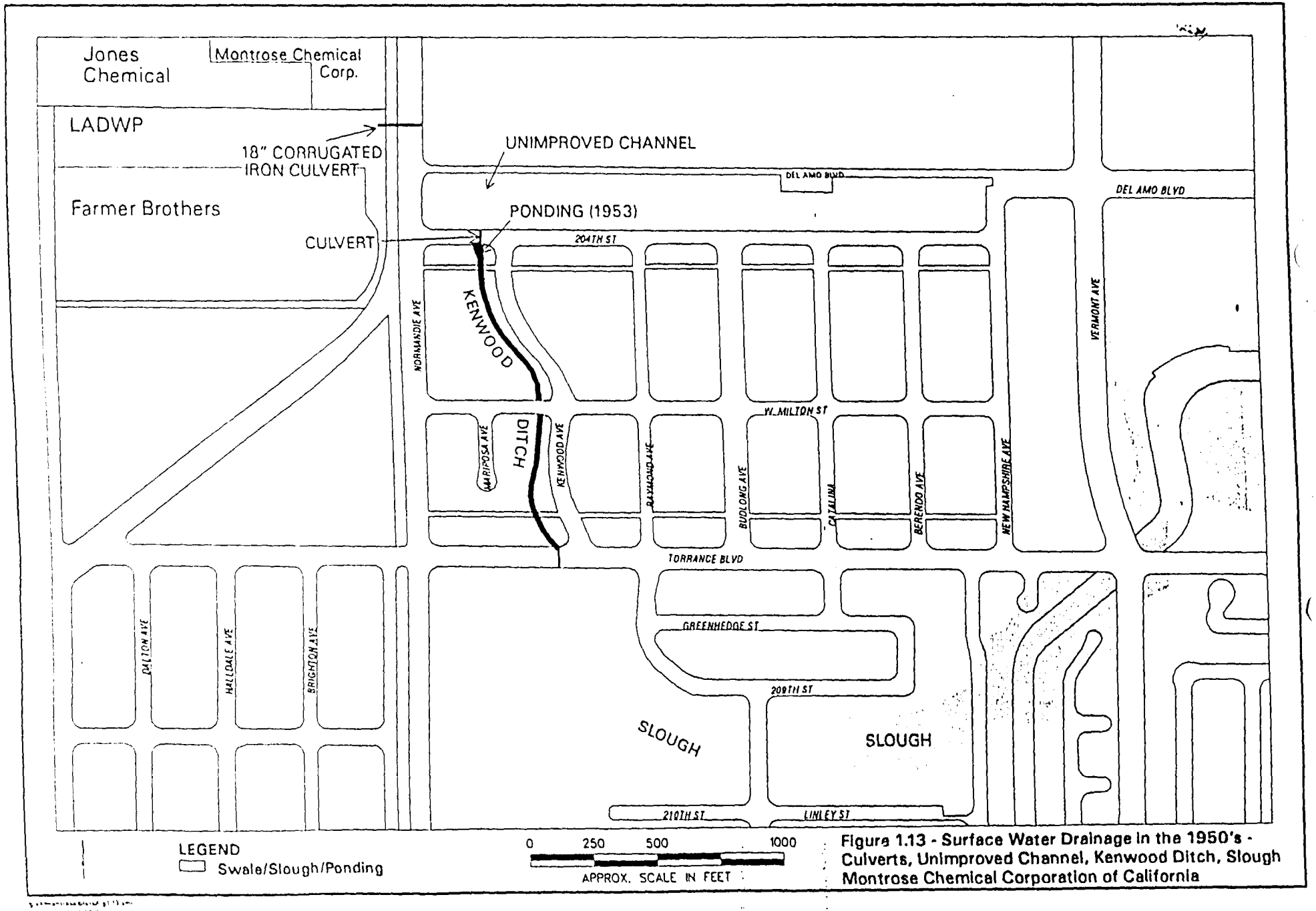


Figure 1.13 - Surface Water Drainage in the 1950's - Culverts, Unimproved Channel, Kenwood Ditch, Slough Montrose Chemical Corporation of California

FIGURE 1b

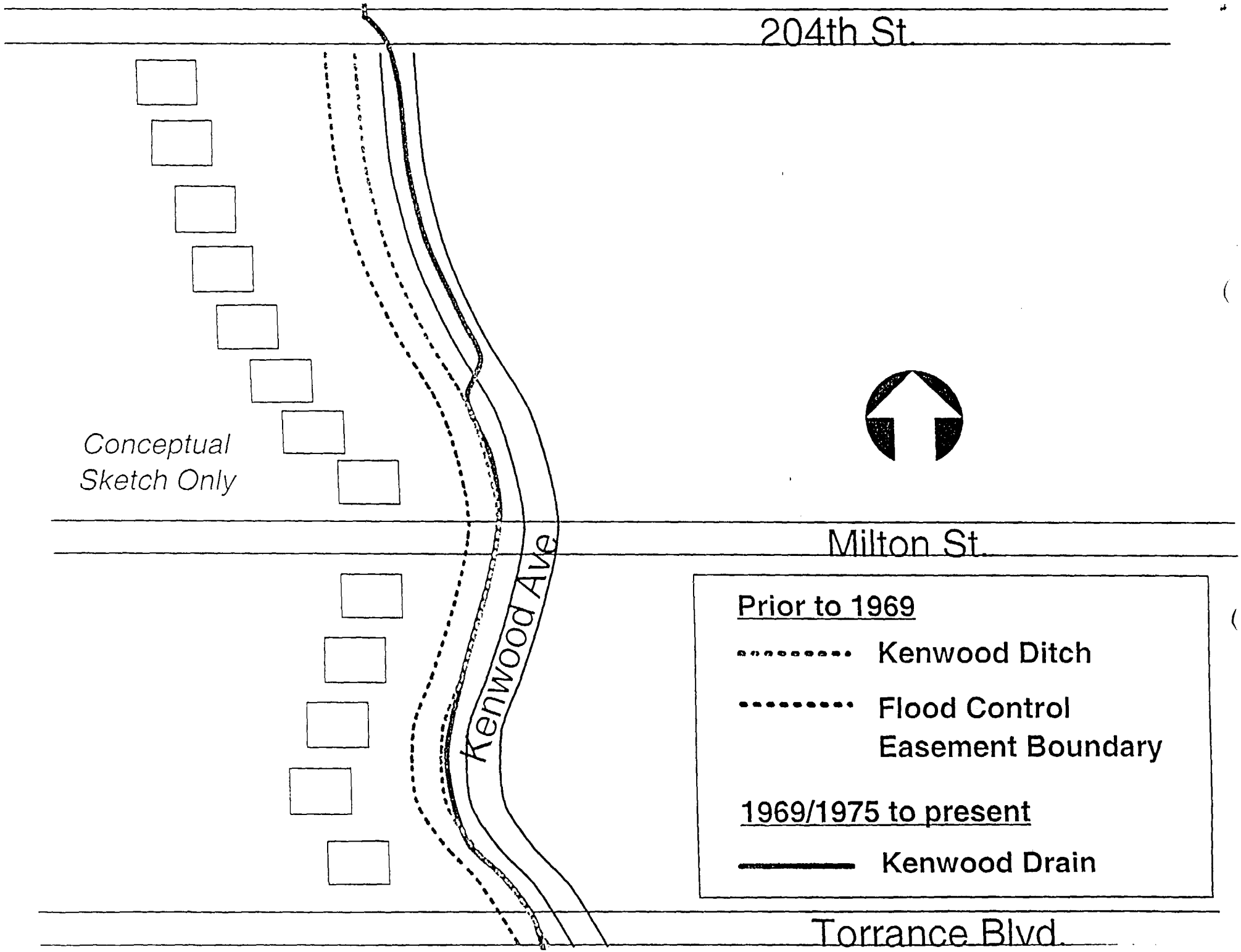
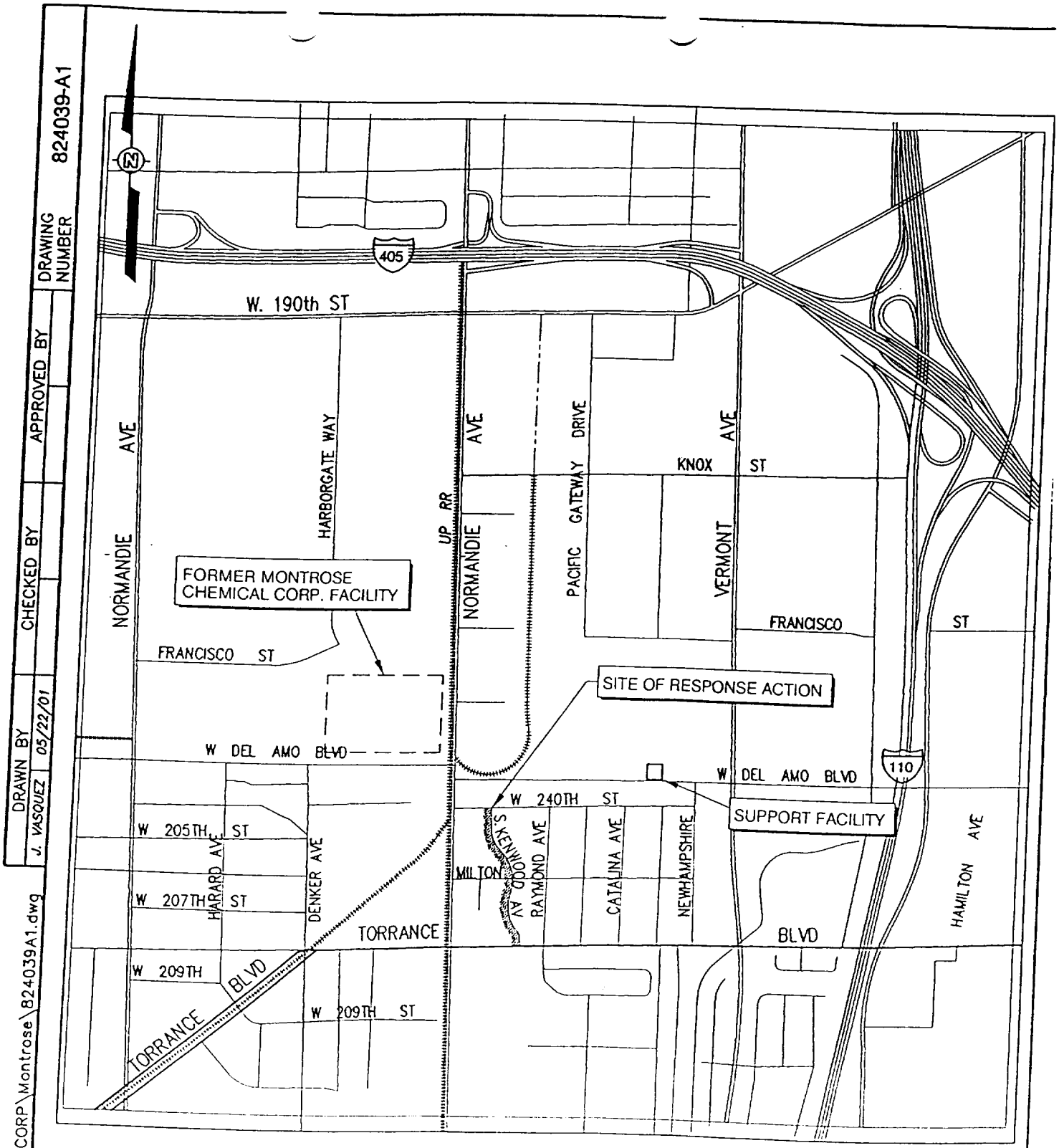

204th St.
Conceptual
Sketch Only
Kenwood Ave
Milton St.
Prior to 1969
Kenwood Ditch
Flood Control
Easement Boundary
1969/1975 to present
Kenwood Drain
Torrance Blvd.

FIGURE 2



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IT CORPORATION

U.S. ARMY CORPS OF ENGINEERS
RAPID RESPONSE

FIGURE 1-1
VICINITY MAP

KENWOOD STORM WATER DRAINAGE PATHWAY
LOS ANGELES, CALIFORNIA

FIGURE 3

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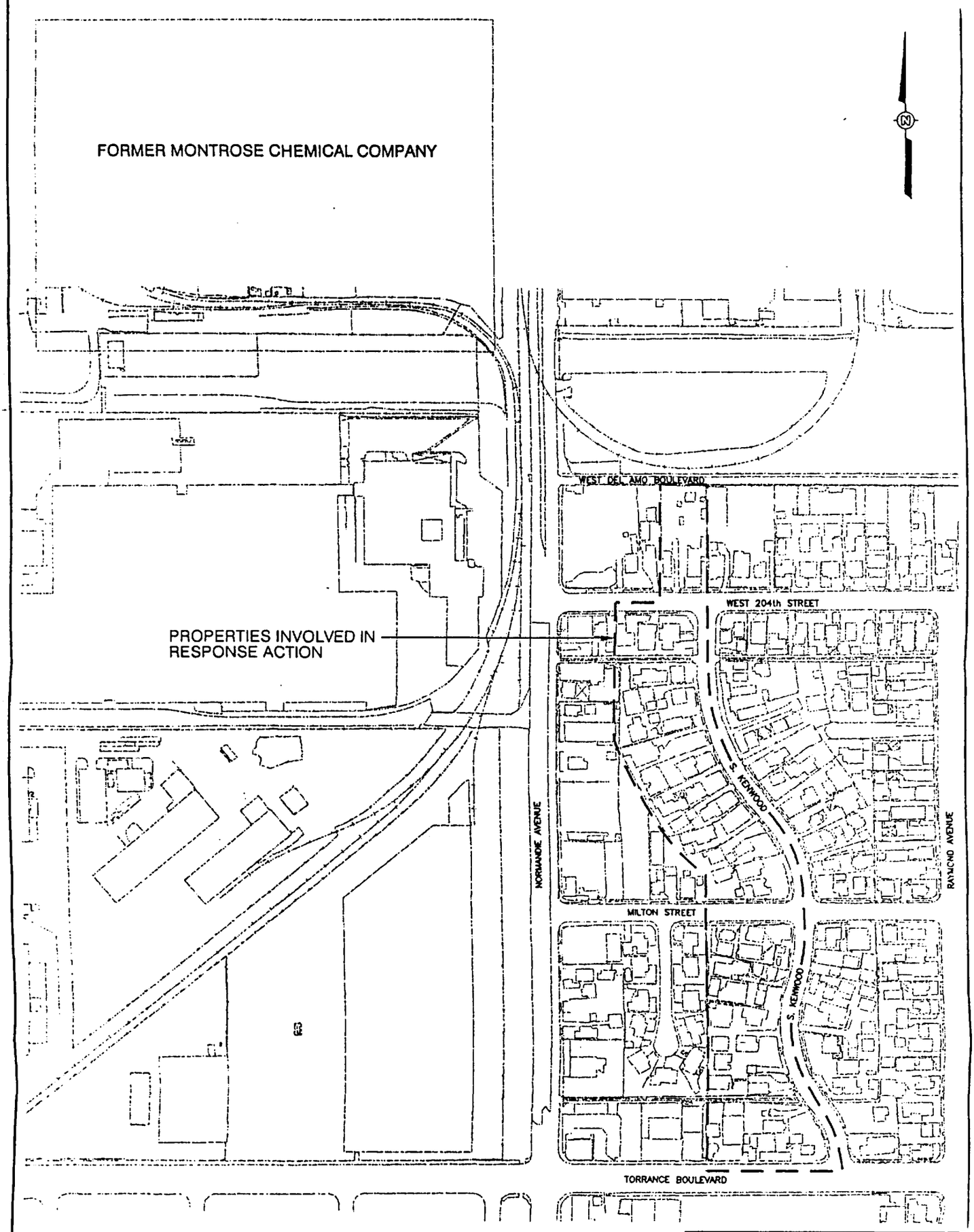
J. VASQUEZ	05/22/01						



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IT CORPORATION

U.S. ARMY CORPS OF ENGINEERS
RAPID RESPONSE

FIGURE 1-2

SITE OF RESPONSE ACTION
KENWOOD STORM WATER DRAINAGE PATHWAY
LOS ANGELES, CALIFORNIA

Attachment 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

June 7, 2001

MEMORANDUM

Subj: Kenwood Stormwater Drainage Pathway

To: Jeff Dhont, Project Manager

From: Dr. Sophia Serda, Toxicologist Dr. Sophia Serda

As you know, I am the EPA Region 9 toxicologist for the Kenwood neighborhood, as well as the Montrose Chemical Superfund site. I have previously reviewed and provided comments on the Risk Assessment for soils associated with the Kenwood storm water drainage pathway (Appendix K; *Remedial Investigation Addendum; Residential Soils and Produce Investigation, Montrose Superfund Site*; April 2001). It is my opinion that the Risk Assessment is in compliance with EPA Risk Assessment Guidance for Superfund and meets the requirement for a risk assessment under both CERCLA and the NCP.

The Risk Assessment provides estimates of future potential health risks. The risk estimates indicate that soils on the west side of Kenwood Avenue are sufficiently elevated above background to require an EPA removal cleanup action.

Thank you for giving me the opportunity to provide technical support. If you have further questions, please feel free to contact me at 744-2307.

DECLARATION OF PROOF OF SERVICE

RE: **United States of America and State of California v. Montrose Chemical Corporation of California, et al.**
Case No.: CV903122R

I, **Aimee Lopez**, declare:

I am employed in the City of Los Angeles, County of Los Angeles, State of California. I am over the age of 18 years and not a party to the within action. My business address is 300 S. Spring Street, 5th Floor, Los Angeles, California 90013. On January 31, 2002, I served the documents named below on the parties in this action as follows:

DOCUMENT SERVED: **PARTIAL CONSENT DECREE (RELATING TO THE NEIGHBORHOOD AREAS)**

SERVED UPON:

____ **BY MAIL:** I caused each such envelope, with postage thereon fully prepaid, to be placed in the United States mail at Los Angeles, California. I am readily familiar with the practice of the Office of the Attorney General for collection and processing of correspondence for mailing, said practice being that in the ordinary course of business, mail is deposited in the United States Postal Service the same day as it is placed for collection.

I hereby certify that I am employed in the office of a member of the Bar of this Court at whose direction the service was made.

__XX__ **BY OVERNIGHT MAIL:** I am readily familiar with the practice of the Office of the Attorney General for collection and processing of correspondence for overnight delivery and know that the document described herein will be deposited in a box or other facility regularly maintained by United Parcel Service for overnight delivery.

SEE ATTACHED SERVICE LIST

____ **BY FACSIMILE:** I caused to be transmitted the document described herein via the following facsimile number:

I declare under penalty of perjury under the laws of the State of California that the above is true and correct. Executed on January 31, 2002, at Los Angeles, California.

Aimee Lopez
_____
Declarant

_____
Signature

UNITED STATES OF AMERICA AND STATE OF CALIFORNIA
v.
MONTROSE CHEMICAL CORPORATION OF CALIFORNIA, et al.

NO.: CV903122R

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